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### The Beattie-Smith Lectures.<sup>1</sup> (UNIVERSITY OF MELBOURNE.)

#### INSULIN AND "CARDIAZOL" IN THE TREATMENT OF THE PSYCHOSES.

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##### LECTURE II: "CARDIAZOL" TREATMENT.

It is just six years since Dr. von Meduna, of the Royal Hungarian State Mental Hospital, published his first paper on the "Cardiazol" treatment of schizophrenia.

Meduna was impressed by the antagonism that exists between malaria and general paralysis of the insane, and he determined to try to find a similar antagonist for schizophrenia. He discovered an article written in 1929 by Nyiro, another Hungarian, who investigated the spontaneous recovery rate in epilepsy and found it to be 15%; when the epilepsy was associated with schizophrenia, however, the recovery rate rose to 16%. On these figures Nyiro postulated an antagonism between epilepsy and schizophrenia. In 1930 Müller, a German author, described two patients suffering from schizophrenia who regularly had remissions after spontaneous epileptic seizures. In 1931 Glaus, of Zurich, investigated 6,000 cases of schizophrenia, and found eight in which epilepsy was also present. After carefully reviewing these eight cases he concluded that a preceding epilepsy made the outlook for the following schizophrenia much worse, since an epileptic is protected from schizophrenia, and if the latter state does develop it must be in a very severe form. Steiner and Strauss went even further when they declared that typical

epileptic seizures were so rare in schizophrenia that if cases appeared to occur, there was reason to doubt the diagnosis.

After reading these reports of an alleged antagonism between epilepsy and schizophrenia, Meduna wrote:

For my part I do not care to take such a definite attitude, for doubtless cases are known in which both diseases run their courses side by side. However, these cases are among those rarities whose small numbers do not suffice to invalidate the authority of the recorded facts, and so I feel justified in setting up the following working hypothesis: "Between schizophrenia and epilepsy there exists a sort of biological antagonism which must be expressed in the pathological course of the two diseases. Without being able to characterise these pathological actions, I feel justified in asserting that these courses are either mutually exclusive, or they do, at least to a great degree, weaken each other in their mutual effects."

Meduna felt that if epilepsy brought about a pronounced improvement in schizophrenics, the obvious thing to do was to find some safe and certain means of inducing epileptic seizures in schizophrenic patients. After extensive animal experimentation, he used on human beings a 25% solution of camphor in oil. Camphor, however, had many disadvantages; it was toxic, variable in its action, and prone to produce a state of acute delirium. Consequently, after further experiments he abandoned camphor for "Cardiazol", a circulatory stimulant, manufactured by the firm of Knoll.

"Cardiazol", or pentamethylenetetrazol, is allied to camphor pharmacologically, but has the advantage that it is readily soluble in water. Meduna used "Cardiazol" in 10% solution and administered it intravenously, and time has proved it to be a safe and certain convulsant drug. It may be as well to explain that "Cardiazol" is manufactured in the United States of America under the trade name "Metrazol", and that since the war it has been sold in Australia as "Pentazol". So "Cardiazol", "Metrazol" and "Pentazol" are one and the same thing, and in this country the drug is usually known as "Cardiazol".

<sup>1</sup> Delivered at Melbourne on November 18 and 25, 1940.

### Technique.

Since its introduction six years ago, the technique of "Cardiazol" therapy has undergone some minor modifications. Nowadays the treatment is given along the following lines. The patient who, on psychiatric grounds, is considered suitable for "Cardiazol" treatment is first subjected to a thorough physical examination. This is not done because the presence of any organic disease necessarily contraindicates treatment; on the contrary, very old patients, very cachectic patients, and some patients with definite organic lesions may be safely treated. The examination is made because, on general medical grounds, one should be aware of the presence of any physical lesion which is likely to cause trouble. As will be mentioned later, "Cardiazol" treatment is safe; but this does not mean that it should be undertaken without adequate preliminary examination, and during this examination particular attention should be paid to the teeth.

On the night preceding the treatment it is desirable, but not essential, to withhold sedatives, particularly bromides and the barbiturates. On the morning of the treatment no breakfast is given, but an early morning cup of tea and a biscuit can do no harm. Dentures are removed, the patient is kept in bed and two or preferably three nurses should be present to assist.

The initial dose of "Cardiazol" is usually five cubic centimetres of the 10% solution, and this is injected intravenously, the injection being made with reasonable rapidity. Immediately the needle is withdrawn digital pressure is applied to the site of the puncture and maintained for two or three minutes to prevent leakage and preserve the vein for future use.

Within a few seconds of the injection the patient has a typical epileptic seizure. There is usually a short cough, followed immediately by blinking of the eyelids, and a rigid apprehensive attitude of the patient. For a few seconds there may be some jerky, purposeless movements, and the patient may call out. Speech and movements, however, are abruptly terminated by the sudden onset of the tonic phase of the seizure; the whole body becomes rigid, the mouth is wide open, the spine is somewhat extended and pronounced pedo-carpal spasm is present. The mouth remains open for a few seconds and then the jaws slowly close with great force and the seizure passes into the clonic stage. During the clonic spasms the patient's colour becomes increasingly alarming; but at the end of the convulsion, and after a brief period of apnoea, there is a deep inspiratory action and the colour rapidly returns to normal.

The seizure lasts about one minute, and is followed by a period of unconsciousness for about ten minutes and then by a period of confusion or drowsiness for about one hour; occasionally considerable excitement may follow the seizure. Usually the patient is able to get up and have a meal about two or three hours after the injection, but mild headache may persist for the remainder of the day.

Sometimes this initial dose of five cubic centimetres fails to produce a major seizure; instead a *petit mal* type of reaction results. This is known as a "missed fit", and consists of a few clonic jerks, a fixed, apprehensive facial expression with dilated pupils, and sometimes much restlessness and shouting. When the initial dose of five cubic centimetres results in a "missed fit", a second dose of six cubic centimetres is immediately given. This second injection may be more than six cubic centimetres if the experience of the physician suggests that the initial dose was particularly inadequate. Since "missed fits" are most undesirable, every effort should be made to obtain a seizure with this second injection; but if this also fails, a third injection of a further increased dose may be given, provided that the patient is in good physical condition. Three injections should be the maximum given at any one sitting.

The management of the seizure is of great importance, since carelessness in this respect results in a number of avoidable complications. There should be at least two, and preferably three, nurses at the bedside; one stands at the head of the bed and controls the jaw, and when the mouth

opens inserts a suitable gag. The second nurse applies a tourniquet and holds the arm for the injection. The third is on the opposite side of the bed and controls the arms. There should be no pillows under the patient's head. The injection is given, and as the needle is withdrawn a nurse applies a swab to the puncture mark and maintains pressure on it during and for some time after the seizure; this facilitates future injections into the same vein. The nurse on the opposite side holds the elbows beside the body to prevent abduction of the arms. The nurse at the head of the bed controls the jaw as the mouth opens, and inserts the gag between the teeth as the jaws clamp together. There is always plenty of time for this manoeuvre, and it should never be hurried.

It has previously been mentioned that sometimes patients become very restless after the seizure, and it should be noted that this restlessness is often prolonged by unwise attempts to restrain it. Commonly one finds after a seizure two or three inexperienced nurses violently struggling with a patient, when all that is necessary to quieten the patient is to release him and permit him to sit up in bed. The patient is usually up and about by lunch time, and he leads a normal hospital existence according to his mental state until the next treatment.

There is some difference of opinion as to how frequently seizures should be induced; I feel strongly that in the early stages, particularly if the patient is grossly psychotic, treatment should be given at least three times a week, and preferably every other day. When the patient's condition begins to improve and he is able to discuss his illness, the number of injections should be reduced to two a week. Treatment is continued until the patient has reached the maximum improvement, and then one or two further convulsive seizures are induced for good measure. If there is no improvement after fifteen seizures, the treatment should be abandoned.

It should be emphasized that "Cardiazol" treatment is much more than a series of intravenous injections. As the patient's condition improves he should be encouraged to discuss his symptoms, and these should be explained to him; later, when his condition improves further, friendly talks from time to time will help to develop and consolidate his insight. To develop a psychosis must be an alarming experience; but I often think that to recover from one must be equally alarming, and it is the psychiatrist's bounden duty to make the psychotic's return to sanity as smooth and as permanent as possible. To give injections of "Cardiazol" and to omit to give therapeutic talks is not to give Meduna's "Cardiazol" therapy, and such a procedure deprives the patient of his best chance of recovery.

The first sign of the patient's improvement should be carefully watched for and is easily recognized. The conduct may become more normal, or obvious hallucinations may disappear, or the patient may exhibit a more cooperative and friendly manner and begin to take an interest in his personal appearance. In women the first favourable sign is often the reappearance of the lip-stick. At the first sign of improvement, frequent but brief therapeutic talks should be instituted, and during these an attempt should be made to find out how much of the acute psychotic phase of his illness the patient remembers. Sometimes there is apparently fairly complete amnesia for the worst phase of the illness; but usually the abnormal conduct, the hallucinations and the delusions are vividly recalled.

As soon as the patient begins to express some doubt as to the reality of his "voices" or "visions", this doubt should be encouraged, and with further improvement he should be told outright that he has been suffering from a mental illness and that the hallucinations were symptomatic of that illness. The realization that he has been mentally ill often proves rather upsetting, and so it should be explained that mind and body are interdependent and that it is foolish to regard mental and physical illness as being poles apart. It can be explained to the patient that the medical student who faints at the sight of his first operation is in reality suffering from a mental illness, in that his emotions have so adversely affected the normal

functioning of his body that even consciousness is no longer possible.

Such simple explanations, in which stress is laid on the similarity of mental and physical illness, will reassure the patient and make him less worried by the thought that he has been mentally ill. These therapeutic talks should be frequent, brief and friendly, and it is surprising how much they can do to develop a patient's insight—that is, a realization that he has been mentally ill and that his abnormal conduct *et cetera* were the result of that illness.

The convalescent patient who dismisses his illness as "a bit of a nervous breakdown" is not really well, and it is much preferable to hear him say: "Well I must have been balmy."

When the patient leaves hospital I think it is important, firstly, that he should return to his normal life gradually—for example, his work should at first be light and then be gradually increased over a period of, say, two months; secondly, he should not be too ambitious as regards his work and should avoid accepting any responsibility that might exceed his capabilities.

It has been said that one of the advantages of "Cardiazol" treatment is that it can be given by the general practitioner; but it seems to me that such a statement needs some qualification. The ability to give "Cardiazol" efficiently depends not on whether one is a general practitioner or a psychiatrist, but on one's knowledge of and particularly one's attitude to mental illness.

In many respects the family physician is in an ideal position to treat a developing or early psychosis; he knows the patient personally, and has treated him for and watched his reactions to the ordinary illnesses of childhood. He knows the patient's domestic background and is often the family confidant, and so is in a position to establish a more satisfactory rapport than the consultant can ever achieve. I have heard such a practitioner remark that he always tells his patients that fear and envy are two toxins which the kidney will not excrete, and I feel sure that such a man is quite capable of giving "Cardiazol".

On the other hand, the practitioner who refuses to recognize the psychological factors which are undoubtedly present in many cases of physical illness, or who regards a neurosis as a condition akin to malingering, or who looks upon certification as the last word in the diagnosis and treatment of mental illness, is, in my opinion, quite unfitted to give "Cardiazol" treatment.

I have seen patients admitted to hospital who had partially recovered after "Cardiazol" treatment, although a diagnosis had never been made; this seems to me to be most undesirable. I am not suggesting that the general practitioner is peculiar in his inability to diagnose every case of psychosis; but I do think that before one begins to treat a patient every effort should be made to determine the nature of the condition from which the patient is suffering.

With regard to the actual cause of mental illness, psychiatrists are divided into two schools of thought; the first believes that the cause is purely physical, the second holds that psychic factors are to blame. Both schools, however, are agreed that in "Cardiazol" treatment the injections must be combined with common-sense psychotherapy, and in this respect I should like to quote Meduna himself:

I should like to mention that this treatment of schizophrenia cannot effect a complete cure. For schizophrenia presents a psychic disorder based on a patho-physiological foundation, and therefore we must not only influence the biological patterns, but must also seek to help the patient along psychological lines. It seems to me superfluous to emphasise that the treatment of schizophrenia can never be successful with mere medical treatment, much as I am convinced of the purely material nature of the disease. The significance of the psychiatric treatment seems to me to be so far beyond doubt that I consider it unnecessary to look for justification.

#### Difficulties in Technique.

There is really only one difficulty in the administration of "Cardiazol"; on occasions it may be difficult to introduce the needle into a vein. This is due to two factors:

firstly, small veins, and secondly, a resistive patient. When the veins are small any intravenous injection may be difficult, and in the case of "Cardiazol" the injection is rendered more difficult by the stress that has been laid on the necessity for rapidity. To achieve this rapid injection it is customary to use a needle of large bore, which is difficult to introduce if the veins are small and often causes damage to the veins. Furthermore, the rapidly injected fluid distends the small vein, causing leakage around the point of entry, or even actual rupture. This probably results in a "missed fit" and certainly makes future injections more difficult. I think that undue stress has been laid on the necessity for rapid injection. The use of a small hypodermic needle will prevent damage to the vein, will make a too rapid injection impossible and will produce a seizure just as effectively as a needle of larger bore. At the worst, it may necessitate a small increase in dose, but in my experience most female patients can be successfully treated with a hypodermic needle and a dose of five to seven cubic centimetres.

"Cardiazol" in 10% solution undoubtedly can cause thrombosis; but I feel sure that many of the so-called thrombosed veins are produced by perivenous clotting resulting from faulty technique with too large a needle.

In male patients a rapid injection is of more importance; but in these cases there is seldom difficulty with the veins. Sometimes men require dangerously large doses of "Cardiazol", and in such cases a particularly rapid injection may avoid the necessity of progressively increasing the dose. This particularly rapid injection may be achieved by the simultaneous injection of half the dose of "Cardiazol" into each arm.

Sometimes the veins in the cubital fossa are too small to inject, but veins of reasonable size are present around the wrist or on the dorsum of the hand. Injections in these areas are much more painful than in the cubital fossa, but if the patient is sufficiently stoical these veins can be satisfactorily used. Often, however, injections in these areas are so painful that the patient involuntarily withdraws the arm, making the injection very difficult. In such cases it is an excellent plan to render the patient drowsy with sub-coma doses of insulin. This method differs from the combined insulin and "Cardiazol" therapy, and, provided the patient is in hospital, can be safely used in private practice. It is carried out in the following way.

The fasting patient is given a small dose of insulin, say 20 units, about two and a half hours before the physician visits the hospital. This will almost certainly have little effect, and on successive days the dose is gradually increased, until on about the sixth day, after a dose of insulin of about 100 units has been given, the physician will find on his arrival that the patient is in a light semi-comatose state. "Cardiazol" can then be given into the painful area about the wrist and hand without any flinching on the part of the patient. The fit ensues and terminates the hypoglycæmic state sufficiently to enable the patient to take a glucose drink. Soon afterwards a meal with a high carbohydrate content should be given, since the increase in the blood sugar content resulting from the seizure lasts only from half an hour to two hours.

Some 15% sterile glucose solution should be always at hand so that in the unlikely event of the development of dangerous hypoglycæmic symptoms before the arrival of the physician, the nurse can give sufficient glucose intramuscularly to render the patient's condition safe. It was mentioned in the previous lecture that 15% glucose solution may be given intramuscularly without the slightest danger.

The second cause of difficulty with the intravenous injection is possible resistiveness on the part of the patient. A patient may resist the injection either because of his mental state or because he is terrified of the treatment. In either case the injection is difficult to give, and again in such cases the treatment may with advantage be combined with sub-coma doses of insulin as just described. In this procedure the insulin acts as a sedative, but it is a particularly valuable sedative, since it really does render the patient amnesic, it lowers the threshold to the convulsive seizure, and the hypoglycæmia seems to enhance the therapeutic effect of the "Cardiazol".



Thus it is seen that this method of masking "Cardiazol" with sub-coma doses of insulin may be used in cases in which injection into the painful areas about the wrist is necessary, or in which the patient is restless and afraid; for some obscure reason it seems to act particularly well.

An alternative method of treating patients with small veins is by using another convulsant drug known as "Triazol" or "Azoman". The great advantage of this drug is that much smaller doses are needed, one cubic centimetre often producing a seizure, and consequently injection of small veins is easier. In addition, "Triazol" has other advantages; it is less unpleasant, it eliminates venous sclerosis and it may be given intramuscularly. For some time it appeared as if "Triazol" might take the place of "Cardiazol", but it would appear to have an appreciable mortality rate, and I think that today the swing is back to "Cardiazol".

There are a variety of methods of producing therapeutic seizures. Inhalations of nitrogen, the intravenous injection of ammonium chloride, and electricity, have all been used as convulsants; but it is difficult to imagine a safer or more reliable convulsant than "Cardiazol".

### Complications.

#### Fractures.

I come now to the complications of "Cardiazol" therapy, and the first of these is the occurrence of fractures. During the "Cardiazol" seizure, and particularly during the tonic stage, alarming creaks and cracklings may be heard in or about the joints. Various writers overseas have reported serious fractures of the humerus, femur and scapula, and at least two authors have reported bilateral fractures of the femoral necks. I have not seen or heard of any fracture of this type in Australia, and such fractures must be so rare as to be of little practical importance.

There is one fracture, however, which may occur during the "Cardiazol" seizure and which is of considerable importance—that is, a compression fracture of the bodies of the vertebrae. Since the inception of the treatment it has been noted that patients frequently complained of pain in the back, and it was assumed that this was due to torn muscle fibres. Comparatively recently it has been shown by radiological examination that this pain is often due to compression fractures of the middle and lower thoracic vertebrae. Polatin, in the United States of America, radiologically examined a series of 50 patients who had had "Cardiazol" treatment and made the rather alarming discovery that 22 of them had vertebral fractures. Palmer, in England, found five fractures in 20 cases. Routine radiological examination shows these fractures to be much more common than one would suppose, or in other words many of them cause no symptoms and the patients apparently recover quite well without any treatment at all. This suggests that the fractures are not nearly so serious as would appear at first sight.

The orthodox treatment for these fractures is prolonged immobilization in a plaster jacket, and this procedure was recently recommended by orthopaedic surgeons writing in *The American Journal of Psychiatry*. I would suggest, with some diffidence, that from the surgical point of view this prolonged immobilization may not be necessary, and I am certain that from the psychiatric point of view it is most undesirable. Anyone who has been in a plaster jacket for any length of time will agree, I am sure, that it is an uncomfortable and depressing experience, and one from which the convalescent psychotic should be spared if it is at all possible. The following cases suggest that it is possible to spare patients this ordeal.

A female patient, after a course of "Cardiazol" treatment, complained bitterly of pain in the back and developed a slight kyphosis. Two months later she had a second course of "Cardiazol", consisting of four seizures. Two months later still she was radiologically examined and found to have crushed fractures of the fifth and sixth dorsal vertebrae, with some wedging and good callus formation. She was seen at this time by an orthopaedic surgeon, who advised against immobilization and prescribed plenty of exercise and movement.

The point I wish to emphasize is this: two months after sustaining a crushed fracture of two vertebrae, this patient was on four occasions subjected to the identical trauma that produced these fractures, yet four months after the original injury the condition of the fractures was quite satisfactory.

Another patient, a male, complained of pain in his back after his first "Cardiazol" seizure. Radiological examination revealed the usual fractures of the fifth, seventh and eighth dorsal vertebrae. Fortunately he made an excellent recovery from this one seizure, and so the problem of whether to continue the treatment or not did not arise. He was kept strictly in bed, but no immobilization was used. At the end of ten days he was free from pain. At the end of four weeks he was gradually allowed to get up out of bed. At the end of seven weeks an X-ray examination revealed satisfactory callus, and he was discharged from hospital symptomless. He was advised to lead a very quiet life and to report back for examination one month later. However, he promptly joined the Australian Imperial Force.

These cases, combined with the large number of fractures of vertebrae which are undiagnosed and apparently unite satisfactorily, suggest that the fractured spine due to "Cardiazol" treatment can be satisfactorily treated without a plaster jacket and in a much shorter period of time than one would think possible. An obvious risk is the development of a future traumatic spondylitis, and time alone will tell whether this complication occurs with sufficient frequency to indicate a return to the treatment by prolonged immobilization. In the meantime I feel that these patients should be spared the plaster jacket and allowed to run the risk of a future Kummel's disease for the sake of hastening their psychiatric convalescence.

It is interesting to consider at what stage in the convulsion these fractures occur. Crushed fractures of the vertebral bodies are generally considered to result from acute flexion of the spine, but during the "Cardiazol" seizure, although at certain stages some degree of flexion occurs, there is nothing even approaching the really acute flexion one usually associates with these injuries. During the clonic stage commonly some minor degree of flexion occurs, and it is usually assumed that it is during this phase that the fractures are produced by the powerful clonic spasms pounding together the partially flexed vertebrae. During the tonic stage commonly some hyperextension of the spine occurs; nevertheless I feel that it is during this phase, when the muscular contractions seem to assume their maximum violence and one hears such alarming skeletal creaks, that these fractures occur. Pain is of course the main symptom of this fracture, and often there is some tenderness over the spinous process of the offending vertebra. In addition there is sometimes some swelling just to one side of this spinous process.

Spinal anaesthesia has been suggested as a prophylactic measure against these fractures, but its routine use would appear to be quite unnecessary. It would, however, be very valuable when a patient actually sustained a fracture, as it would enable the treatment to be continued without causing further damage to the fragments.

I have not heard of the use of spinal anaesthesia in combination with "Cardiazol", but I can readily think of possible difficulties. It has already been seen that moderate headache is a common aftermath of the seizure, and of course severe headache may follow the spinal anaesthesia. Furthermore, the restlessness which sometimes follows the seizure might make it difficult or even impossible to posture the patient with the head low in an attempt to prevent the post-anaesthetic headache. So there is a possibility that after the seizure the patient would be the unfortunate victim of a "Cardiazol" headache in addition to a spinal anaesthetic headache.

Another possible difficulty is suggested when the behaviour of the blood pressure under "Cardiazol" and spinal anaesthesia is considered. At the onset of the "Cardiazol" seizure there is an abrupt rise in blood pressure, and it appears likely that this is an important factor in causing the seizure, since premedication with vasodilator drugs such as sodium nitrite prevents the onset of the convulsion. During spinal anaesthesia, however, the blood pressure commonly falls, sometimes to a dangerous degree, and it



seems possible that this fall in blood pressure might abort the seizure.

The routine use of ephedrine with spinal anaesthesia might give rise to difficulties, since animal experimentation has shown that adrenalin administered just before the "Cardiazol" causes an alarming rise in blood pressure followed by pulmonary oedema and death.

In spite of these possible disadvantages and dangers, I think the use of spinal anaesthesia with "Cardiazol" treatment would be a rational procedure when a patient who was in urgent need of "Cardiazol" sustained a vertebral fracture early in the treatment.

#### Dislocations.

In addition to fractures various dislocations may occur as the result of "Cardiazol" treatment. The two commonly met with are dislocations of the jaw and of the shoulder. As I have said, the mouth opens widely at the onset of the "Cardiazol" seizure, and as a result the mandible is dislocated fairly frequently. Reduction without a general anaesthetic is nearly always a simple matter, and if the mandible is properly supported at the onset of the seizure this dislocation will be found to be relatively uncommon. Its occurrence should never contraindicate further treatment.

Dislocation of the shoulder is less common, and in my opinion is always due to faulty technique. When the injection of "Cardiazol" is given, the arms should be by the sides, and during the seizure they should be retained there with just sufficient force to prevent abduction. If this simple rule is adhered to dislocation of the shoulder will rarely, if ever, occur, for it is when the patient is allowed to embark on the seizure with the arms abducted that the head of the humerus is dislocated.

I have said that there is some doubt as to whether the vertebral fractures occur during the tonic or the clonic stage of the seizure. Certainly the shoulder is dislocated during the tonic stage, for I have seen and actually heard the dislocation take place.

#### Pulmonary Abscess.

One of the most serious complications occurring in "Cardiazol" treatment is the development of a pulmonary abscess; at Mont Park we have had two cases. The first occurred during the course of treatment, and the patient recovered. The second case occurred some months after the treatment had been terminated. This patient made an excellent recovery after an apparently normal course of "Cardiazol" treatment; but when he left hospital he had a very slight but persistent cough. Since he was gaining in weight, his chest was normal on examination and he looked extremely well, little importance was attached to the cough. He returned to his work, was promoted, and six months later died of a pulmonary abscess.

This of course is a major disaster, and one naturally looks for the cause and prevention of this condition. The separation of an embolus from a thrombosed vein has been blamed; but the most likely cause seems to me to be the inhalation of a foreign body, such as food debris or a broken tooth or filling, during the vigorous inspiration that follows the convulsive seizure. The long latent interval in the second case mentioned would suggest a metallic foreign body.

If this is so, prevention would depend on attention to the teeth before treatment is begun and on the adoption of proper technique during the seizure; the patient's head should be kept low during and for some time after the seizure and the gag used should be sufficiently soft to exclude the possibility of damage to the teeth or fillings.

#### Psychiatric Complications.

The purely psychiatric complications of "Cardiazol" treatment are few. The risk of producing permanent cerebral damage is one of the arguments used by the opponents of the new shock methods of treatment. A certain amount of impairment of memory is common in patients who have responded satisfactorily to "Cardiazol",

but in the vast majority of cases this memory defect clears up in a few weeks, and the large number of patients who return home and resume work at their previous intellectual level is proof that there can be no appreciable mental reduction.

One does sometimes see some degree of dementia in schizophrenics who have failed to respond to prolonged "Cardiazol" therapy, but it is surely unreasonable to claim that because this dementia follows "Cardiazol" treatment it is therefore the result of it. This *post hoc propter hoc* type of argument is generally admitted to be fallacious; but it becomes ridiculous when we remember that dementia is the almost inevitable lot of the schizophrenic who does not recover. A high proportion of the deeply demented patients who fill the "chronic" wards of our mental hospitals are schizophrenics who have not had "Cardiazol".

Some degree of mental enfeeblement may sometimes be found in melancholics who have only partly recovered with "Cardiazol" treatment; but this dementia is little, if any, more pronounced than that commonly seen in melancholics of long standing who recover spontaneously, and it may or may not be due to "Cardiazol". Even in these cases the patient's lot is an infinitely happier one than before treatment; at the best he can live at home under a moderate degree of supervision, so that the replacement of a state of intractable melancholia by one of mild dementia would appear to be justified.

#### The Safety of the Treatment.

The admittedly serious complications which have just been described, coupled with the fact that to the uninitiated the "Cardiazol" seizure is a drastic and dangerous manifestation, may give the impression that the treatment should be carried out only on the most robust patients. In reality, "Cardiazol" is a very safe form of therapy—so safe, in fact, that I feel we should apply the maxim: "If in doubt, give it."

Cachexia, no matter how advanced, is not a contraindication. The most wasted patients will stand a seizure perfectly well, and it is interesting to note that these patients have very mild, gentle seizures which increase in severity and violence as the physical condition improves. An adult woman weighing three stone ten pounds may stand a seizure without the slightest trouble.

Theoretically, the risk that these wasted patients may sustain fractures should be greater; but in my experience this is not so, possibly because they have such mild seizures.

Old age is certainly not a bar to treatment. At Mont Park, a woman aged eighty years, with arteriosclerosis, a systolic blood pressure of 260 milligrammes of mercury and doubtful renal function, was successfully treated. Similarly in certain cases patients suffering from mitral stenosis may be treated with safety.

A woman, aged thirty-four years, suffering from agitated melancholia, was found on examination to have a pulse rate at rest of 110 per minute, a slapping first sound at the apex, and a variable blood pressure, which at its worst was 95 millimetres of mercury systolic and 75 diastolic. Fluoroscopic examination of the heart revealed an enlarged left auricle and ventricle and a dilated *conus arteriosus*. This patient was given "Cardiazol" on several occasions, and at no time did her condition cause anxiety.

Psychotic patients who have previously been thyrotoxic present a problem if they show signs such as tremor, tachycardia and increased pulse pressure. All these signs may be seen in certain psychotic states—for example, agitated melancholia—and it is impossible to determine whether they are due to a return of the thyrotoxicosis or to the mental condition. I believe that in such cases the treatment should be given, as in my experience the results are excellent.

Deaths from "Cardiazol" treatment are rare. The only fatality in my experience occurred in the case previously mentioned in which the patient developed a pulmonary abscess some months after the treatment.

Reports from overseas indicate that death may result from the following conditions: lobar pneumonia developing during treatment, lobar pneumonia following a

fractured femur, pulmonary abscess, unrecognized coronary artery disease, unrecognized pulmonary tuberculosis and status epilepticus.

Before leaving this subject I would again stress the safety of "Cardiazol", and remind you that the conditions for which it is given are so serious that a risk far greater than actually exists in this treatment would be justified. The risk to patients who appear normal on physical examination is negligible, and even when the treatment is given in doubtful cases the outcome is almost invariably successful, so that I would repeat: "If in doubt, give it."

#### The Therapeutic Action of "Cardiazol".

I think we should briefly consider the manner in which "Cardiazol" produces its beneficial effects.

Unlike insulin treatment, and in fact unlike most therapeutic measures, "Cardiazol" treatment is not empiric, but is based on a definite theory of its mode of action—that is, on the antagonism between epilepsy and schizophrenia. There is, however, a considerable difference of opinion among psychiatrists as to the accuracy of this observation, and most of the senior psychiatrists whom I have questioned deny that the coexistence of schizophrenia and epilepsy is rare. However, it must be remembered that these are merely opinions, whereas Meduna's observation was based on a careful statistical survey. I have seen at least one patient who suffered from both epilepsy and schizophrenia, and in this case it did seem as if the seizures produced some amelioration of the schizophrenic features.

However, if "Cardiazol" acts by virtue of a biological antagonism between epilepsy and schizophrenia, there must also be an equal antagonism between epilepsy and the manic depressive psychoses, for in these latter states "Cardiazol" often produces a result even more dramatic than that seen in schizophrenia. To regard epilepsy as such a panacea would seem unreasonable, and I feel that Meduna's explanation of the *modus operandi* of "Cardiazol" is by no means the whole truth.

An alternative theory, and one commonly put forward, is that "Cardiazol" acts by virtue of the fear it produces in the patients treated. Undoubtedly the treatment is unpleasant and in some patients engenders nothing short of abject terror; but the majority of patients show no such terror and are prepared to go through with it. They describe it as "horrible" or "awful", but they readily submit to it. In my experience the patients who recover after "Cardiazol" treatment are those who show no great terror of the injections; those who are terrified have at the best a fleeting remission. It is common knowledge that the "missed fit"—that is, the *petit mal* type of reaction resulting from an inadequate dose—is even more unpleasant than the successful seizure; but most psychiatrists agree that these terrifying "missed fits", far from improving the mental state, affect it adversely.

There is, however, a stronger argument against the theory that "Cardiazol" benefits patients by the fear it induces. If a patient who has relapsed after a frightening course of "Cardiazol" is given a course of combined insulin and "Cardiazol" therapy, he may have an excellent remission and be quite unaware of the fact that he has had more "Cardiazol". I have frequently carried out this procedure in cases of melancholia, and am sure that the "Cardiazol" and not the insulin plays the major part in producing a recovery; and since the patient is unaware of the fact that he has had more "Cardiazol", fear of this drug can hardly be a therapeutic factor.

It is worth noting that a patient who is being tube fed cannot be induced to eat by the threat of being given "Cardiazol".

A female patient in a katatonic stupor had a course of "Cardiazol" treatment without showing any improvement. About a year later she refused to eat and had to be tube fed. When she had been tube fed every day for six months she was transferred to the ward in which she had been given the "Cardiazol" and, thinking she was to have more "Cardiazol", she screamed in terror. She was promptly given an injection of "Cardiazol", and at subsequent

injections she was shown a glass of milk and the syringe filled with "Cardiazol" and given her choice. On every occasion she chose the "Cardiazol".

Von Meduna's theory of the mode of action of "Cardiazol" can hardly be accepted in its entirety; but it is certainly preferable to the theory that "Cardiazol" frightens patients back to their senses.

It has been claimed in certain quarters that the beneficial effects of both insulin and "Cardiazol" are due to purely psychological factors; that the intensive nursing, the ritual associated with the injections and the individual attention given by the medical officer, all combine to promote the recovery of a patient who previously was relatively ignored on the airing-court. In the case of insulin this theory has been exploded in several overseas clinics where controls have been treated with sterile water under exactly the same conditions as the rest of the patients in the clinic. In no case did the controls show the slightest improvement. In the case of "Cardiazol" also, I think the theory can be disproved. It is not uncommon to see a patient have a remission after being given "Cardiazol", and as soon as the treatment is finished to relapse. Two or three further injections will again produce a remission, but again the patient relapses. At Mont Park such a patient was given calcium chloride instead of "Cardiazol". This substance must be injected with great care, and it produces rather unpleasant symptoms. The patient, however, showed no improvement, but as soon as the calcium chloride was replaced by "Cardiazol" she had her usual dramatic remission.

It must be frankly admitted that the manner in which "Cardiazol" acts remains a complete mystery; but this is a shortcoming "Cardiazol" has in common with many other valuable therapeutic measures, and it in no way detracts from the value of the treatment.

#### The Combined Insulin and "Cardiazol" Treatment.

No discussion of insulin and "Cardiazol" would be complete without a mention of the method of combining the two forms of therapy.

The combination or summation therapy was introduced by Georgi, in Switzerland, as a result of the observation that the spontaneous hypoglycemic seizure occurring during insulin treatment often appeared to produce a pronounced improvement in the patient's mental state. The combined insulin and "Cardiazol" treatment is given in the following manner. The patient is started on a course of insulin treatment along the lines laid down by Sakel—that is, a small initial dose of insulin is given and this is increased each day until the dose sufficient to produce coma is reached. After the patient has had a coma on a few days, "Cardiazol" seizures are induced during the period of hypoglycemia in the following way. The usual coma dose of insulin is given, but before the coma is actually reached and while the patient is in a drowsy, muddled state, "Cardiazol" is injected intravenously and a seizure follows. The dose necessary to produce a seizure is usually smaller than that needed when "Cardiazol" is given alone. The seizure terminates the hypoglycemic state sufficiently to permit the patient to take a glucose drink, and soon afterwards a light meal is given. The following day the patient may be given a rest, or insulin treatment may be given alone. Usually the "Cardiazol" seizures are induced twice a week, and on the remaining days the hypoglycemic treatment is given alone in the usual way.

The only difficulty encountered during this combined treatment is the persistent vomiting which may follow the seizure, and this can usually be avoided if the glucose is given intravenously instead of orally.

This combined treatment may appear to be very severe, but actually it is quite safe and may be given to patients over fifty years of age. In some unknown way it seems to act very satisfactorily, and in many respects appears to be the ideal treatment for schizophrenics.

#### Results of Insulin Treatment and of "Cardiazol" Treatment.

It is convenient to discuss the results of the "Cardiazol" and insulin treatments together; but before doing so I

think it is desirable briefly to describe the mental illnesses in which these new treatments are used, particularly schizophrenia and the manic-depressive psychoses.

Insulin and "Cardiazol" were both introduced in an attempt to treat the condition that was formerly known as *dementia præcox*, later was called primary dementia and nowadays is included in the wider term schizophrenia. Although it is inaccurate to do so, I shall regard schizophrenia as synonymous with the older term *dementia præcox*.

This condition of schizophrenia or *dementia præcox* usually begins insidiously during adolescence, and is characterized by increasing apathy and indifference and a gradual withdrawal of the patient into himself, so that he ceases to be interested in the world of reality. Hallucinations and delusions develop, and typically there is a progressive deterioration of the mental faculties, so that the condition ends in deep dementia.

Four types of schizophrenia may be described: (i) simple schizophrenia, (ii) hebephrenia, (iii) katatonia and (iv) paranoid schizophrenia. (i) In simple schizophrenia pronounced apathy and emotional blunting are present. Hallucinations and delusions are commonly absent, but the patient is quite indifferent to his fate and usually there is a progressive deterioration of the mental faculties. (ii) In hebephrenia more obvious psychotic symptoms are present. Hallucinations and delusions are common and the patient shows pronounced emotional disturbances. Abnormal conduct, erratic acts and mannerisms frequently occur. (iii) Katatonia is characterized by two phases, stupor and excitement. In katatonic stupor the patient stands or sits in the one position for hours at a time with a dull, vacant facial expression, and is quite indifferent to his surroundings. He is mute, often incontinent of urine and feces, and he may have to be tube fed. As a result of his inactivity the extremities become blue, cold and œdematous. Katatonic excitement may alternate with the stupor; there is a wild, restless excitement in which the patient often assaults those about him, and sometimes mutilates himself. Hallucinations and delusions are present, but sometimes the speech is incoherent and confused—the so-called "hotch potch". (iv) Paranoid schizophrenia was formerly called *dementia præcox paranoides*. Patients suffering from this condition have both hallucinations and delusions and may show abnormalities of conduct. The essential feature, however, is the variable fantastic and unsystematized nature of the delusions, which may be persecutory or grandiose.

It should be emphasized that there is considerable overlap between these four types of schizophrenia and it is not always easy to classify schizophrenics on this basis.

The second form of mental illness to be considered is the manic-depressive psychosis. This condition is characterized by an alternation of mood from periods of excitement and elation to periods of depression and misery. During the elated or manic phase the patient is "super-charged" both mentally and physically. He is elated, garrulous and grandiose, and often shows the typical "flight of ideas". Often pronounced hyperæsthesia of the skin and sometimes hyperacousis are present. Physically the patient is overactive, always on the go, and cannot spare the time for eating or sleeping. In the depressed or melancholic phase, the picture is the exact opposite. There is pronounced slowness of thought and action, and the patient is depressed, miserable and often actively suicidal. Delusions of unworthiness are typical and the patient is convinced he can never recover.

Although these two conditions of mania and melancholia are supposed to be merely different phases of the one condition (manic depressive psychosis), many patients develop mania or melancholia, and remain elated or depressed without showing any sign of swinging to the opposite emotional state, so that it is convenient to regard mania and melancholia as two separate and distinct conditions.

Therefore the three most important psychoses to be considered from the point of view of insulin and "Cardiazol" treatments are the four types of schizophrenia, mania and melancholia.

#### Results in Schizophrenia.

In almost every important country in the world it has been proved that the number of schizophrenics who recover after insulin or "Cardiazol" treatments is at least three times as great as the number who recover spontaneously. I am not going to weary you with tedious statistics on the subject, because the time has long since passed when there was any doubt of the value of these new forms of treatment; but it should be emphasized that the chance of recovery of a person who develops schizophrenia today is at least three times as great as it was before the days of "Cardiazol" and insulin.

Rather than waste time in discussing the well-known fact that both insulin and "Cardiazol" produce remissions in at least 60% of recent schizophrenics, I think that it is of more value to try to decide, first, whether insulin or "Cardiazol" or both should be given to a particular type of schizophrenic, and secondly, for how long patients who have had a remission remain well.

It is not easy to decide whether a particular type of schizophrenic should have insulin or "Cardiazol" treatment. In the simple type of schizophrenia the prognosis is poor with either treatment. The hebephrenics in my experience do better when given insulin, although it is sometimes necessary to combine this treatment with "Cardiazol" therapy. In katatonia, if the stuporous stage predominates, "Cardiazol" should be given; but in stages of excitement insulin is to be preferred. Paranoid patients do better when given insulin; but unless the disease is of recent onset the results in this group are disappointing.

My own view is that in most cases of schizophrenia, insulin is better than "Cardiazol"; it improves the physical condition in a dramatic fashion, it is less unpleasant for the patient, and it seems to result in a more satisfactory type of remission. However, "Cardiazol" undoubtedly has an important place in the treatment of schizophrenia, and it seems to me that the ideal plan is to start the patient on insulin treatment, and then if necessary to combine this treatment with "Cardiazol". This method has two important advantages: first, it avoids damaging the patient's morale by the abandoning of one form of treatment which has proved a failure, and in addition it combines the therapeutic effects of both insulin and "Cardiazol". It is surely desirable to muster all our forces when dealing with such a doughty opponent as schizophrenia, and in this connexion I should like to quote Sakel:

My experience indicates that the epileptic shock breaks down the barriers and prepares the field for the hypoglycæmic effect. The epileptic attack is the artillery, the hypoglycæmia is the infantry in the battle against the disease. According to military theory, the artillery never occupies and conquers hostile territory, it can only open the way for the infantry. We see that in most cases of acute psychosis the epileptic attack does good, but this improvement is only transient and incomplete, unless the territory so opened up is occupied by the hypoglycæmia.

It may appear at first sight that insulin and "Cardiazol" are such severe treatments that the use of either alone is sufficient strain on the patient, and that the combination of the two is unduly severe and brutal. Actually, the combined treatment is quite safe and may be given to patients aged over fifty years. Furthermore, patients invariably prefer the combined treatment to treatment with "Cardiazol" alone, and sometimes a patient will actually prefer the days on which the "Cardiazol" seizure is produced to the days when the shock is produced by the hypoglycæmia alone.

The next question to answer is: "How long does the schizophrenic remain well who has apparently recovered after treatment with insulin or 'Cardiazol'?" The accompanying tables are an attempt to answer this question.

Before the end of 1937, 12 schizophrenics were discharged from the Mental Hospital, Mont Park, having apparently recovered after insulin treatment. Table I is simply a "follow up" of these 12 patients, and shows that nine of them are still at home, and six of them are apparently normal. There are possible sources of error in a "follow up" such as this. (i) There may be errors in



TABLE I.

Patients Discharged from Mental Hospital, Mont Park, three years ago, having "Recovered" after Insulin Treatment.

Number.	Sex.	Age. (Yrs.)	Condition.	Duration of Psychosis.	Present Condition of Patient.
I	M.	26	Paranoid.	3 years.	X <sup>4</sup>
II	M.	24	Hebephrenic.	2 years.	+++ <sup>1</sup>
III	F.	19	Katatonie.	6 months.	+++
IV	M.	28	Schizophrenic.	6 months.	+++ <sup>2</sup>
V	F.	24	Katatonie.	2 weeks (?).	+++ <sup>3</sup>
VI	M.	19	Paranoid.	6 weeks.	++
VII	F.	25	Hebephrenic.	8 months.	+++
VIII	F.	24	Hebephrenic.	6 months.	X
IX	F.	24	Hebephrenic.	7 months.	+++
X	F.	17	Hebephrenic.	4 months.	X
XI	F.	33	Paranoid.	6 months.	+++
XII	F.	24	Hebephrenic.	14 months.	+++

<sup>1</sup> +++ = psychiatrically normal, earning capacity unimpaired.

<sup>2</sup> ++ = at home and working, but not completely normal.

<sup>3</sup> + = just able to keep out of hospital.

<sup>4</sup> X = relapsed and returned to hospital.

TABLE II.

Patients Discharged from Mental Hospital, Mont Park, two and a half years ago, having "Recovered" after "Cardiazol" Treatment.

Number.	Sex.	Age. (Yrs.)	Condition.	Duration of Psychosis.	Present Condition of Patient.
I	M.	34	Katatonie.	8 months.	+++ <sup>1</sup>
II	M.	26	Hebephrenic.	3 months.	+++
III	M.	26	Hebephrenic.	2 years.	X <sup>4</sup>
IV	M.	30	Schizophrenic.	15 months.	X
V	M.	23	Simple.	15 months.	X
VI	F.	27	Katatonie.	15 months.	+++
VII	F.	37	Katatonie.	5 months.	+++
VIII	F.	21	Hebephrenic.	21 months.	X
IX	F.	33	Manic.	9 months.	+++
X	F.	45	Melancholia.	4 years.	+++
XI	F.	26	Melancholia.	7 months.	+++
XII	F.	45	Melancholia.	6 months.	+++

<sup>1</sup> +++ = psychiatrically normal, earning capacity unimpaired.

<sup>4</sup> X = relapsed and returned to hospital.

diagnosis. Of the 12 patients, 10 were undoubtedly schizophrenics. Patient IV was almost certainly a manic-depressive; but since he has not maintained his improvement, this does not affect the results. Patient IX was possibly a manic-depressive. (ii) A second possible source of error is the likelihood that the institution of the treatment may coincide with a spontaneous remission. Patient V did seem to be improving before the treatment was begun, but since then she has partially relapsed; this does not affect the results. In the remaining 11 cases the improvement began only when the treatment was instituted; but with regard to Patient XI, the insulin may not have been the sole therapeutic factor. This patient after a few inductions of coma developed a cavernous sinus thrombosis, followed by a streptococcal empyema, but eventually made a complete recovery both physically and psychiatrically. (iii) A third possible error is the fact that optimistic and grateful relatives are apt to give flattering reports of the patient's condition. Due allowance has been made for this, and the patient's present condition has been assessed very critically. Furthermore, one fact stands out—namely, that nine of the twelve patients are still at home.

Table II is a "follow up" of 12 patients discharged two and a half years ago, having apparently recovered after "Cardiazol" treatment, and of these 12 patients only the first eight were schizophrenics. With regard to Patient IV there was some doubt about the diagnosis; however, this patient is classified as "a complete failure". In the remaining cases the diagnosis was beyond doubt. Patient II improved dramatically immediately the treatment was stopped, and so there is some doubt as to whether the "Cardiazol" was responsible for the satisfactory result; but I think it certainly played a part.

This phenomenon of "late ripening" is accepted when the results of insulin treatment are being assessed, and so I

think it should be allowed in connexion with "Cardiazol"; however, unless the improvement follows immediately on the cessation of treatment, I think it should be viewed with suspicion.

It should be noted that these eight schizophrenics include the patient who died of a pulmonary abscess, and who is, of course, classified as "a complete failure", and also a patient suffering from simple schizophrenia, which has a notoriously poor prognosis. Thus in the circumstances the fact that four of these eight schizophrenics are still psychiatrically normal must be regarded as very satisfactory. It is also worth noting that of these four patients who remain well, two were in a katatonic stupor, and it is this condition which responds so favourably to "Cardiazol"; in other cases of schizophrenia, I believe insulin is the better treatment.

#### Results in Melancholia.

When we come to consider the results of treatment with insulin and with "Cardiazol" in melancholia, we find a very different story. In the treatment of melancholia, "Cardiazol" is so much superior to insulin that I feel that the latter should not be considered. This new treatment of melancholia is one of the greatest advances psychiatry has made, and in certain cases seems to me to be one of the most dramatic therapeutic measures known to medicine. This may seem rather an exaggerated claim, and so in support of it I should like to quote a case.

A woman, aged forty-five years, was admitted to hospital in January, 1935, suffering from melancholia. She was depressed, spoke only in monosyllables and had to be fed with a spoon. A little later she was described as depressed, agitated, wringing her hands, at times incontinent of urine and faeces. For four years she remained at Mont Park in exactly the same state, and in December, 1938, she was described as follows: "A typical melancholic facies—marked psycho-motor retardation—slightly resistive—answers questions only in monosyllables and after a considerable pause. Admits to feeling miserably unhappy." At the end of December, 1938, four years after her admission to hospital, she was given her first "Cardiazol" injection, and the next day her condition was normal. She was bright and cheerful—in fact she showed the usual mild elation and had insight into her mental state. She was full of gratitude and said: "I feel as if I've been dead for years and you have brought me to life again." At the present time, nearly two years later, she is perfectly well and managing her own home.

Usually the melancholic responds to "Cardiazol" treatment more quickly than the schizophrenic, so that after two or three seizures a definite improvement occurs, and after about eight seizures it is usually possible to cease the treatment.

Immediately after the treatment there is often a state of mild euphoria, but this almost invariably tones down to a normal emotional level. I do not think that this euphoria is due to the "Cardiazol" itself; it seems more reasonable to regard it as the normal reaction to the good fortune of being relieved of a most distressing malady.

Agitated melancholics and those with hallucinations require a longer course of treatment and sometimes show an unfortunate tendency to relapse soon after the treatment is stopped. Such patients should always be given a second course of "Cardiazol" treatment, preferably combined with insulin, and frequently a more stable remission will result.

The most satisfactory of all patients are those with melancholic stupor; in these conditions one can almost guarantee a dramatic recovery. Similarly, excellent results are obtained in the involuntal cases, and this is all the more satisfactory when we remember that before the advent of "Cardiazol" these cases had the worst prognosis of all.

Unfortunately only four patients with melancholia are represented in Table II; however, they were all typical melancholics—depressed, self-accusatory and hopeless in their outlook, and they are all perfectly well today.

#### Results in Mania.

The fact that patients who recover after "Cardiazol" treatment often become slightly euphoric for a short time, has given rise to the belief that "Cardiazol" itself produces

a state of elation, and has led to a reluctance to employ "Cardiazol" treatment in mania. I think this is unfortunate, because in my experience, which has admittedly been small, patients suffering from mania respond to "Cardiazol" in a very gratifying manner. The true manic-depressive patients, who show a fairly rapid periodicity, should in my opinion not be treated with either insulin or "Cardiazol".

#### Conclusion.

In conclusion, I should like to say that although mental illness is admittedly a cruel and dreadful thing, there is no justification for the hopeless attitude most people adopt towards it, and no justification for regarding mental hospitals as places where patients are "put away". Quite apart from insulin, "Cardiazol", malaria and other active therapeutic measures, many frank psychotics recover when given commonsense advice, occupational therapy, rest and good nursing, and routine kindly institutional discipline. Tables I and II show that of 24 patients discharged from hospital three years ago, 70% are still at home, and nearly 60% are perfectly normal and working.

Let us consider the probable present condition of 24 representative patients discharged from a medical ward of a general hospital three years ago. A few, such as those who suffered from pneumonia, pernicious anaemia *et cetera* will be back at work; but many, such as those suffering from cardiac and rheumatoid conditions, will be quite incapable of work even if they are still alive, and I venture to say that less than 60% will be employed in their former occupations. So, I think, one can justly claim that from the therapeutic point of view psychiatry compares favourably with other branches of medicine.

### THE OPERATIVE TREATMENT OF MASTOIDITIS: A REPORT ON WORK DONE AT THE ROYAL NORTH SHORE HOSPITAL OF SYDNEY DURING THE PERIOD JANUARY, 1930, TO SEPTEMBER, 1940.<sup>1</sup>

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THE enterprise of the Oto-Rhino-Laryngological Society in presenting each year a long-range study of one subject—which was so ably initiated in 1939 by the staff of Sydney Hospital—is carried on this year by Royal North Shore Hospital. We have the privilege of setting before you a study of the operative treatment of mastoiditis in this hospital since January, 1930.

We are pleased to direct attention to the comprehensive report, published in *The Journal of Laryngology* of October, 1936, by the late J. S. Fraser, of Edinburgh, and our own G. C. Halliday, upon 891 consecutive cases of acute middle ear suppuration and mastoiditis treated during the period 1920 to 1934.

These authors invited other otologists to publish results in a similar manner—that is to say, results concerning consecutive cases including both good and bad results. The otological staff of the Royal North Shore Hospital is glad to accept this invitation, and to publish now records of all the cases in which mastoid operations have been performed during the period commencing January, 1930, and ending September 30, 1940.

<sup>1</sup>Read at a meeting of the Oto-Rhino-Laryngological Society of New South Wales (British Medical Association) on November 14, 1940.

It is unfortunate that our records are less complete than we could desire, and that some details are missing. It is also regrettable that we have failed to tabulate some particulars which may have been shown in these histories, but which we have overlooked through lack of time or through having worked less systematically than we should have done. However, we are sure that anyone who has attempted to summarize hospital records over a period of ten years will sympathize with our difficulties. We can only say we have enjoyed this work; and we express the hope that our listeners may find of value the information that we lay before them.

#### The Scope of the Report.

We have set out faithfully, and to the best of our ability, the information contained in our records. We do not attempt a critical review of mastoid work generally, but confine our remarks to such observations as we consider justified by our own experience and methods.

Our clinic is only of medium size and consequently the number of cases available is a modest one. But we have had the great advantage from this fact that we have been able to keep our own work entirely in our own hands. Thus, consultation between us has been the rule prior to operation; and the after-care has remained in the hands of the operator, who has, in nearly every instance, carried it out himself. We have thus been able to avoid that break in continuity which appears inevitable in larger organizations, because diagnosis and after-treatment in the out-patient department are not in the same hands as the treatment of in-patients. In particular, there are only two points in the routine treatment to which we make special reference.

We emphasize our routine method in acute cases of wound closure with glass tube drainage in the inferior angle. This has proved a great boon alike to patient, surgeon and nurses, making dressings simple and painless



FIGURE 1.  
Glass drainage tubes recommended for use after mastoid operations.

and considerably shortening healing time. It is a method that we can and do recommend with the greatest confidence. We are convinced that inlays of gauze are not drains in any sense, but act as obturators. To those who may be of the opinion that rubber tubes, glove drains, *et cetera*, will do as well, we say emphatically that this is not the case. We have made trial of many substances, and none of them is so easy to use or so satisfactory as the small glass drains we exhibit tonight.

In respect to chronic cases and the radical operation, we now believe that rarely, if ever, is there an absolute indication for a classical radical operation; we do not consider the presence of cholesteatoma to be a bar to the performance of a conservative operation. Further, in the performance of the more conservative operation wide plastic measures on the canal are quite unnecessary. After all, what is aimed at is access to the part where disease

may remain or recur. This area is in the atticotympanic region and in the middle ear. Nothing is likely to occur in the more laterally placed parts of the wound, and it is an advantage to encourage early healing in this area.

Since our record is of consecutive cases in which operation was performed, it follows that among patients who died are a number who were already moribund when treatment was undertaken. At least eight of the 23 who died merit this classification, and three others were victims of serious complications when admitted to hospital. During the period under review brain abscesses have been diagnosed in nine instances. Drainage of the abscess in the earlier cases was carried out with rubber tubes. The two successful cases were as follows: one was an accidentally discovered temporal lobe abscess, the track of which was gently dilated; one was an abscess drained through the parietal region. The last patient whose abscess was drained in this manner was less fortunate, and he did not recover. We now believe that this method is not the right one unless it can be proved that the abscess is far removed from the tegmen. Drainage from below is preferable on the grounds of accessibility and direction, and because it avoids the creation of a cerebral hernia difficult to control.

The early part of the period under review corresponds to the early part of our association in this work. At that time the clinic undoubtedly contained a greater number of patients with chronically suppurating ears than is the case today. We suggest that the low proportion of chronic cases recorded in 1940 when compared with the whole period is an indication of this reduction in chronic cases. We further suggest that our indications for operation on patients with acute otitis who continue to have a discharge from the ears after six weeks, have played a part in preventing the establishment of chronic infection in a number of cases.

In our 1940 series of acute cases there is a proportionate increase in the patients whose otitis had lasted five weeks or more. We suggest that this indicates greater conservatism in the selection of the time to operate.

Sulphonamide and sulphapyridine have been freely used by us; but their introduction is of too recent date to influence many of the cases in this report. We have no statistics to lay before you on this point; but there can be no doubt that many cases of otitis clear up promptly under the influence of one of these drugs. On the other hand, we have noted some patients who have progressed to mastoiditis, notwithstanding early and adequate dosage.

Although the figures given relate only to the time actually spent in hospital, it is notable that the wounds of patients who have had tube drainage have healed with very short attendance at the out-patient department; no such wound has needed curettage for non-healing, and some exceptionally large cavities have been healed by this method in four weeks.

We desire to pay a most sincere tribute to the members of the staff of Royal North Shore Hospital in all departments for their generous and continuous cooperation in this work. The radiological and research departments have given the greatest possible assistance at all times, while the medical superintendent and resident staff have always met our requests for admission of patients to hospital out of course or for any other assistance required. Our operating team work and nursing have been marked by a splendid spirit of cooperation, although carried out in difficulties which are considerable.

#### The Operative Procedures Adopted.

As a general rule the methods adopted in all operations have been uniform. In the performance of Schwartz operations all findable cells have been opened. With one or two exceptions, all patients have been operated upon by us or by house surgeons under our supervision. Many patients have had the lateral sinus or middle *fossa dura*, or both, exposed *secundum artem*; but no untoward consequence has followed this. In five instances the sinus has been wounded inadvertently during operation by a chip of bone, but in each case the wound has healed without

incident. One patient had his lateral sinus ruptured during dressing, when a probe was put into the wound. This patient suffered a sinus thrombosis as a consequence, but recovered after operation.

At the conclusion of the bony exploration we have cleaned the cavity with hydrogen peroxide and sometimes by syringing it with saline solution. Many wounds have been wiped out with "B.I.P.P.". The wounds have not been sutured, but in a number a suture has been inserted in the upper part. Light packing has been left in, and this gauze has usually been removed in from five to seven days and not replaced. Lately a new technique has been followed—namely, at the conclusion of the bony operation the wound is cleansed with peroxide, doused with saline solution and then lightly packed with adrenalin gauze. The wound is then sutured down to the inferior angle whence the gauze is removed, and a glass tube of special design is now inserted. This remains for about a week, and is removed when the discharge ceases or is scanty. We are satisfied that healing is quicker and that the dressings are less troublesome. This method was shown to us by Gustav Bondy as a personal communication. Special attention is paid in our tables to patients treated by this method. Our patients were as a rule discharged when out-patient treatment was considered suitable; but a few young children had to be retained until the wound was completely healed or even longer for social or domestic reasons. A few patients also had a longer stay in hospital than usual because of some other disease than mastoiditis, not necessarily a complication of it. The average periods in hospital were as follows: the patients in the 1940 period stayed in hospital for an average of 16.7 days; this figure includes one period of thirty-one days and two periods of twenty-eight days, which were necessary for social reasons. Over the whole period of the investigation, patients who had tube drainage stayed in hospital for an average of 15.4 days. In the 1940 period patients who had tube drainage stayed in hospital for an average of fourteen days.

One patient, whose mastoid wound was closed with glass tube drainage subsequently suffered a fresh infection and the wound required reopening. It was found that the cortex had been reformed with the exception of a small hole measuring about two millimetres in diameter. This cortical bone roofed a smooth-walled cavity, and the second operation was easily performed by removal of this new cortex.

It is regretted that a follow-up of the patients generally did not prove to be practicable and has not been attempted; but an attempt has been made to follow up the 1940 patients.

We include, as well as cases of acute mastoiditis, all cases of chronic mastoiditis in which operation has been performed in the same period.

The operations performed for this disease include the complete radical mastoid operation (139), the radical mastoid operation without the performance of plastics (as indicated by R. S. Godsall) (9), the conservative radical operation (Bondy's operation) (32), a few operations for the removal of an incus, either for disease or because it had become dislodged during the operation (Jenkins operation) (9). The type of plastics performed was always a simple slitting of the posterior meatal wall. Elaborate plastics have been avoided; also extensive operations to curette or close the Eustachian tube have been omitted. Curetting in or near the middle ear has been kept to the minimum or avoided.

Radical mastoid wounds have been sutured completely except for a small gauze wick in the lower angle (removed in five days); the sutures were removed usually in seven days. The cavity was packed for seven or more days with a half-inch gauze strip rubbed with "B.I.P.P.". This used to be removed under anaesthesia, but is now more usually removed in stages. During the last year the gauze packing has consisted of four such strips put in together, and this plan has been found greatly to facilitate removal, since the four component strips easily tease out. The packing is renewed until the facial ridge is epithelialized. When packing was given up sooner, troublesome bands sometimes developed between the facial ridge and the roof of the wound. Packing rarely had to be maintained for more



than four weeks. Skin grafting was never carried out. Our present practice is never to perform a classical radical operation; we are satisfied with a conservative type of radical operation. We have never seen post-operative labyrinthitis in such a case, and are convinced that curettage of the middle ear is its cause and is thus undesirable. We are of the opinion also that some cases of facial paresis have been attributable to this curettage, and we have seen no case of paresis after a conservative operation.

A special section is devoted to study of our patients operated on during the nine months ended September 30, 1940. These represent opinion and methods and do, we hope, support our conclusions.

#### Indications for Operation.

**Acute Cases.**—Our indications for operation in acute cases have been as follows:

- Return of pain or fever, or both, after a quiet period, usually in the second or third week.
- Return of tenderness over mastoid tip or antrum, or both.
- Discharge persisting as abundant and purulent after the third week, especially if accompanied by sinking of the postero-superior wall of the canal or by teat-shaped perforation.
- Persistence of abundant discharge after five weeks without other symptom.
- Subperiosteal abscess.
- Intracranial complications.
- Persistence of deafness and abnormal drum appearances in some mild cases usually supported by X-ray findings of bone destruction. (Some cases of this kind are reported and were due to pneumococcus Type III; the onset was painless, and in one case no discharge had occurred.)

CASE 483.—E.D., aged thirty-two years, had awakened three weeks earlier with pain in the left ear, which felt tense with the pain extending into the face. She had had constant pain in the ear but no discharge; at this time she felt stiffness in her neck.

On examination acute tenderness was present over the mastoid area and the patient was deaf in the left ear. The tympanic membrane appeared pearly pink and the landmarks were partly obscured.

On June 7, 1939, a Schwartz operation was performed. The bone was cellular and the confluent type of suppuration was present. The wound was closed with glass tube drainage. The patient was discharged from hospital on June 22, 1939, with a normal ear and a healed wound.

**Chronic Cases.**—Our indications for operation in chronic cases have been as follows:

- Persistent or renewed attic suppuration with or without cholesteatoma, not yielding to conservative treatment. (Tubal and middle ear types were not considered as indicating operation.)
- Exacerbated chronic otitis with posterior perforation.
- Chronic otitis with intracranial complications indicated by symptoms.

#### Conservative Treatment.

Our standard method of treating acute otitis has been douching as required with spirit diluted with twice its volume of sterile water. Nurses are forbidden to wipe out the ear with swab sticks, and furunculosis is unknown in such cases. The area surrounding the meatus is, of course, protected with zinc cream *et cetera* as required.

In chronic cases conservative treatment includes complete cleansing by the surgeon, and in some cases of anterior perforation zinc ionization and the use of boracic acid

iodine powder. Alcohol is the usual substance ordered for drops; peroxide is never ordered. Attic suppuration is treated by air douche and the introduction of alcohol through the perforation, but this is not persisted with for more than four weeks.

We are unable to prove statistically the value of chemotherapy with sulphonamide, but we have had many successes. On the other hand, some patients have undoubtedly contracted mastoiditis although large doses of sulphonamide have been administered in the early stages of otitis and persisted with. Vitamin preparations, notably cod liver oil and "Radiostoleum", have without doubt played a useful part in hastening wound healing.

#### The Classification of Cases.

The statistical tables show all the patients operated upon during the period under review. To overcome the vexed question of when a case is to be classified as "acute" and when "chronic", we may say that under the "acute" heading are grouped all those cases in which the Schwartz type of operation was considered appropriate. Those patients who were considered to require some form of radical operation, on the other hand, are grouped under the heading "chronic". In addition to the general tables covering the whole period, we have compiled special tables for the patients treated in 1940, because we submit these as treated by uniform methods representing our present opinions and practice. Only a few of these 1940 patients who had operations for the acute condition were treated by post-operative (non-renewable) packing, because too free bleeding made the wound unsuitable for tube drainage.

In accordance with the method used in the Edinburgh publication, results have been shown according to age groups. No attempt has been made to determine the relation of these age groups to the same groups in the general population of the district.

TABLE I.

Acute Cases.	Chronic Cases.
Total: 250	204
January to September, 1940: 27	8

TABLE II.

Side.	Acute Cases.	Chronic Cases.
Right .. .. .	115	90
Left .. .. .	97	106
Right and left .. .. .	38	8
Total .. .. .	250	204

Separate tables are shown for "acute" and "chronic" cases (see above), and the cases are divided into three classes for each group as follows:

Class I: Recovered without complications.

Class II: Recovered, but complications (intracranial) were either present on admission to hospital or developed later.

Class III: Died, but complications (intracranial) were either present on admission to hospital or developed later.

TABLE III.  
Operations Performed.

Period.	Schwartz.	Classical Radical.	Modified Radical.			
			Godsall.	Bondy.	Jenkins.	Total.
Total period .. .. .	257	139	9	32	9	50
1940 period .. .. .	29	—	—	6	—	6

TABLE IV.  
Classification of Cases for the Total Period January, 1930, to September, 1940, inclusive.

Age Period. (Years.)	Acute.			Chronic.		
	Class I.	Class II.	Class III.	Class I.	Class II.	Class III.
0 to 9 .. .. .	125	11	3	30	3	1
10 to 19 .. .. .	41	6	—	35	13	2
20 to 29 .. .. .	25	1	—	34	12	3
30 to 39 .. .. .	11	1	1	23	10	2
40 to 49 .. .. .	8	—	1	14	4	4
50 to 59 .. .. .	5	—	3	5	4	3
60 and over .. .. .	8	—	—	2	—	—

TABLE V.  
Classification of Cases in 1940 Period Only—January, 1940, to September, 1940, inclusive.

Age Period. (Years.)	Acute.			Chronic.		
	Class I.	Class II.	Class III.	Class I.	Class II.	Class III.
0 to 9 .. .. .	10	4	1	—	—	—
10 to 19 .. .. .	3	—	—	3	—	—
20 to 29 .. .. .	4	—	—	—	—	—
30 to 39 .. .. .	—	—	—	—	—	—
40 to 49 .. .. .	1	—	—	2	—	1
50 to 59 .. .. .	1	—	—	1	—	—
60 and over .. .. .	4	—	—	1	—	—

TABLE VI.<sup>1</sup>  
Condition of Mastoid.

Condition of Bone.	Acute.	Chronic.
Cellular .. .. .	183	18
Sclerotic .. .. .	23	127
Mixed .. .. .	39	15

<sup>1</sup>The types of suppuration found at operation (when recorded) were: granulating, coagulating or hyperemic, 41 cases; confluent, 114 cases.

TABLE VII.

Period.	Operation for Fresh Infection in Healed Wound.	Conversion of Schwartz to Radical Operation for Non-Healing.	Conversion of Conservative to Classical Radical Operation.
Total period	26	25	3
1940 period	3	3	—

TABLE VIII.

Duration of Otitis Media Prior to Operation when Recorded (Acute Cases).

Duration of Otitis Media.	Total Period.	1940 Period.
1 to 7 days .. .. .	56	3
8 to 14 days .. .. .	53	3
More than two weeks .. .. .	37	4
More than three weeks .. .. .	26	1
Five weeks and over .. .. .	59	17

The complications that occurred were as follows:

Cholesteatoma .. .. .	19
Polyp .. .. .	11
Meningitis .. .. .	13
Lateral sinus thrombo-phlebitis .. .. .	8
Brain abscess—	
Recovery .. .. .	2
Death .. .. .	6
Cerebellar death .. .. .	1
Wounds of lateral sinus (5 recoveries) .. .. .	9
Subperiosteal abscess .. .. .	5
Perisinus or extradural abscess, or both .. .. .	20
	6

#### Facial paresis or paralysis—

Present on admission to hospital .. .. .	1
Spontaneous recovery .. .. .	13
Carcinoma of temporal bone .. .. .	1
Duel-Ballance operation without improvement .. .. .	2
Accompanying fatal meningitis or brain abscess .. .. .	2
	18
Pneumonia .. .. .	5
Paranasal sinusitis .. .. .	5
Septicæmia .. .. .	1
Erysipelas .. .. .	1
Severe acidosis (fatal) .. .. .	1
Measles .. .. .	2
Diphtheria .. .. .	2

#### The Fatal Cases.

Brief histories are appended for all fatal cases.

CASE 162.—A female patient, aged seven years, was admitted to hospital with meningitis; she was drowsy and vomiting and head retraction was present. She had been ill for six days. Convergent strabismus was present, and reflexes were absent. A Schwartz operation was performed; the mastoid bone was cellular in type. Lumbar puncture was performed at operation and turbid fluid was withdrawn; pneumococci were found in the fluid. The post-mortem examination revealed generalized meningitis. The patient was moribund when admitted to hospital.

CASE 195.—A male patient, aged fifty-one years, was admitted to hospital with diabetes and contracted acute otitis. The only operative procedure carried out was paracentesis. Septicopyæmia developed and the patient died fourteen days after the onset of the otitis. The post-mortem examination revealed septicæmia and infarcts in kidney and spleen.

CASE 290.—A female patient, aged thirteen years, had had a discharge from the ear for two months. She was admitted to hospital after having had rigors; neck rigidity was present and her temperature was 103° F. A diagnosis of lateral sinus phlebitis was made. Lumbar puncture was performed and 30 cubic centimetres of clear fluid under increased pressure were withdrawn. An X-ray examination revealed a breakdown of the cells. A Schwartz operation was performed. The mastoid was cellular and confluent destruction was present. An extradural abscess was found; the wall of the lateral sinus was thickened and contained blood. Ten days later the lateral sinus was opened and found to contain blood. The jugular vein was ligated. *Streptococcus viridans* was grown on culture. The patient died ten days later. Post-mortem examination revealed septic meningitis on the affected side; no break was found in the dura, and it was considered that the infection had spread through the *vasa vasorum*.

CASE 379.—A female patient, aged thirty-seven years, had had acute otitis two months earlier. When admitted to hospital she had meningitis. Lumbar puncture was performed and streptococci were found in the smear from the cerebro-spinal fluid. A Schwartz operation was performed, but the only finding was hyperemic bone. The patient died on the third day. A post-mortem examination revealed generalized meningitis.

CASE 380.—A male patient, aged five years, had had acute otitis for one week and had had some convulsive seizures. Lumbar puncture was performed and turbid fluid was obtained; streptococci were found in a smear from the fluid. A Schwartz operation was performed; it was found that the child had early mastoiditis. He died next day and a post-mortem examination revealed generalized basal meningitis.

CASE 382.—A male patient, aged forty-four years, had had influenza for two weeks and pain in the ear for three days. A Schwartz operation was performed, and the only abnormality found was congestion of the cells. Lumbar puncture was performed two days later; the cerebro-spinal fluid was turbid and contained hæmolytic streptococci. The patient died on the fifth day after his admission to hospital. A post-mortem examination revealed meningitis, bronchopneumonia and pyelonephrosis.

CASE 486.—A male patient, aged fifty-six years, had had purulent mastoiditis for one week after an attack of influenza. A Schwartz operation was performed. The patient died three days later from lobar pneumonia.

CASE 532.—A male patient, aged one year, had had acute otitis with discharge for two weeks. A Schwartz operation was performed and a subperiosteal abscess was found communicating with the cells of the mastoid and with an extradural abscess. Recovery was prevented by severe acidosis, which was fatal after twelve days.

CASE 33.—A female patient, aged thirty-four years, had had a discharge from the left ear from infancy; the ear was painful at times. Two weeks before her admission to hospital she had an exacerbation with severe headache. A radical operation was performed and the bone was found to be sclerotic. Facial paralysis developed next day. Two weeks later the patient vomited and fainted; she had pain in the head, pain at the base of the skull and neck rigidity. Kernig's sign was not elicited. Lumbar puncture was performed; the cerebro-spinal fluid was not under increased pressure. A further operation was performed and the wound was explored; the lateral sinus collapsed and the jugular vein was ligated. Four days later lumbar puncture was again performed; the cerebro-spinal fluid was opalescent and under increased pressure; cerebral exploration revealed no abnormality. Pyæmic abscesses developed all over the patient's body, and she died six weeks later. During this period the treatment given included the intravenous injection of mercurochrome, the administration of antistreptococcal serum, a blood transfusion, seven lumbar punctures and two brain explorations. It should be particularly noted that this patient died in the year 1930.

CASE 35.—A male patient, aged forty years, had undergone a Schwartz operation fourteen months previously, on account of a discharge from one ear combined with a feeling of uneasiness in that ear, of six weeks' duration. The discharge continued after the operation, but further surgical procedures were refused by the patient. On his admission to hospital he complained of headache and sleeplessness. A radical operation was performed. The tegmen consisted of a sequestrum and the dura was necrotic; a sinus extending into the brain for a distance of three centimetres was present, and the abscess was drained by means of a tube. Three days later lumbar puncture was performed, and 20 cubic centimetres of cloudy fluid under increased pressure were withdrawn. The patient died ten days after operation. No post-mortem examination was made. The case was typical of Type III pneumococcus infection.

CASE 58.—A female patient, aged nineteen years, had for ten years had an offensive discharge from one ear. A conservative radical operation was performed; the dura was exposed and a temporal lobe abscess was drained. Lumbar puncture was carried out on four occasions. The patient suddenly collapsed and died on the sixth day after operation.

CASE 90.—A male patient, aged fifty-four years, had had chronic otitis with a discharge for five years; he had an exacerbation of the condition, and vomiting had been present for three weeks prior to his admission to hospital. A radical operation was performed. The wound became necrotic and was explored five days later. Lumbar puncture was performed and 30 cubic centimetres of turbid fluid were withdrawn; the cell content of the fluid was increased and the sugar content was diminished; streptococci were

grown in culture. The patient died on the eighth day. A post-mortem examination revealed meningitis from direct spread.

CASE 163.—A male patient, aged twenty years, had had a discharge from the ear for two years. A radical operation was performed. Four days later the patient began to vomit; he had a headache and his temperature rose to 103° F.; neck rigidity was present and Kernig's sign was elicited. Lumbar puncture was performed and the cerebro-spinal fluid was found to be under increased pressure; it contained 6,000 cells per cubic millimetre. Gram-positive cocci were found in a smear from the fluid and hæmolytic streptococci were grown on culture. The fluid contained no sugar. The patient died on the ninth day. No post-mortem examination was performed.

CASE 188.—A male patient, aged two years and nine months, had had a discharging ear for four months; he had been operated on six months previously. The wound was reopened, but the child contracted scarlatina next day. Meningitis developed after six weeks and he died sixteen days later. A post-mortem examination revealed septic meningitis; no direct spread was found. *Streptococcus viridans* was grown in culture.

CASE 192.—A male patient, aged fifty-two years, had had chronic otitis with a discharge for ten years. A radical operation was performed. Later on the same day he had a convulsive seizure, facial paralysis came on, head retraction was present and the patient became unconscious. Lumbar puncture was performed and clear fluid was withdrawn, not under increased pressure. The patient died on the fourth day. Post-mortem the arachnoid was found to be edematous; it contained small nodules, probably due to tuberculous meningitis. Old lesions of pulmonary tuberculosis were found in the lungs. Examination of a section revealed early meningitis.

CASE 305.—A male patient, aged thirty-four years, had had a discharging ear for one year; he had an exacerbation, with pain, headache, neck rigidity and a rise of temperature to 101.4° F. A radical operation was performed; in the cellular mastoid a temporo-sphenoidal abscess was found and drained with two small catheters. The patient died on the eighth day. A post-mortem examination revealed a large abscess cavity in the right temporo-sphenoidal lobe. Septic meningitis was present over the right half of the brain, especially on the base.

CASE 310.—A male patient, aged thirty-four years, had chronic otitis; he had had an exacerbation, with a cold in the head, of three or four days' duration. He had a rigor on admission to hospital. Lumbar puncture was performed and turbid fluid was withdrawn. A diagnosis of cavernous sinus thrombosis was made. Operation was performed as a measure of desperation and the patient died the next day. A post-mortem examination revealed acute meningitis over the whole of the base of the brain, cavernous sinus thrombosis, and thrombosis of the superior petrosal and lateral sinuses.

CASE 321.—A male patient, aged fifty-three years, had undergone a left mastoid operation one year earlier; a sinus was present in the wound. Pain in the right ear and a discharge had been present for two months. On the right side a Schwartz operation was performed and mixed type hæmolytic streptococci were found to be present; on the left side curettage was carried out. A complication was the fact that the patient had *delirium tremens* lasting one day. After two weeks of fever, during which the number of leucocytes in the patient's blood rose from 10,000 to 14,000 per cubic millimetre, the operation was converted to a radical one; the sinus was exposed, a mural clot was found and the jugular vein was ligated. The patient recovered from all these procedures, and suddenly, one week later, had two severe attacks of hæmoptysis; the second proved fatal.

CASE 383.—A female patient, aged twenty-three years, had had earache and a discharge for five days; a diagnosis of meningitis was made on her admission to hospital. Lumbar puncture was performed and turbid fluid under increased pressure was withdrawn. As a desperate measure a radical mastoid operation was performed. The patient died the same day.

CASE 384.—A male patient, aged forty-seven years, still had a discharging ear two months after a Schwartz operation. The wound was explored and the operation was converted to a radical one. Lumbar puncture was performed and turbid fluid under increased pressure was withdrawn; it contained 9,600 cells per cubic millimetre. The patient died the next day. A post-mortem examination revealed generalized basal meningitis, and Type III pneumococci were grown in culture.

CASE 385.—A female patient, aged forty-three years, had had a "cold" two weeks earlier. She was admitted to



TABLE IX.  
Details of 1940 Follow-up.

Reference Number of Case.	Operation Performed.	Wound Healed.	Discharge from Ear.	Deafness in Affected Ear.	Improvement in Hearing.	Pain in Ear.	Remarks.
501	Schwartz.	Yes.	No.	No.	No.	No.	Hearing and membrane normal.
502	Schwartz and conservative radical.	Yes.	Yes.	Yes.	No.	No.	Slight discharge from Eustachian area.
504	Schwartz.	Yes.	No.	No.	—	—	Long stay in hospital on account of bad social conditions.
505	Schwartz.	Yes.	No.	No.	—	No.	Healed in nineteen days.
506	Schwartz.	—	—	—	—	—	No reply; patient aged sixty-six years; wound healed in 23 days.
507	Conversion to conservative radical.	Yes.	Yes.	Yes.	No.	No.	Slight discharge from middle ear; originally scarlatinal otitis.
508	Conservative radical.	Yes.	No.	Yes.	No.	No.	Some buzzing noise.
509	Schwartz and conservative radical.	Yes.	Yes.	Yes.	No.	—	Slight deafness, some discharge from middle ear.
511	Schwartz.	Yes.	No.	No.	—	No.	Quite healed and normal.
512	Schwartz.	Yes.	No.	No.	Yes.	No.	Quite normal, healed under four weeks.
513	—	—	—	—	—	—	No reply.
515	Schwartz.	Yes.	No.	Slight.	Yes.	No.	Quite satisfied.
516	Conservative radical.	Yes.	No.	Slight.	Much.	No.	Very slight vertigo occasionally.
517	Schwartz.	Yes.	No.	No.	Normal.	No.	Wax removed at visit.
518	—	—	—	—	—	—	No reply.
521	Schwartz.	Yes.	No.	No.	Normal.	No.	Had fresh otitis three weeks before; now healed.
522	Schwartz.	Yes.	No.	No.	Normal.	No.	Quite normal.
523	Schwartz.	Yes.	No.	No.	Normal.	Yes.	Pain found due to tonsillitis; tympanic membrane normal.
524	Schwartz.	Yes.	No.	No.	Normal.	No.	Healed in thirty-four days; tube drainage not used.
525	Schwartz.	Yes.	Yes.	Yes.	—	No.	To have adenoids removed.
526	Conservative radical.	Yes.	No.	Yes.	Yes.	No.	—
527	Schwartz.	No.	No.	No.	—	No.	Almost healed; very ill-nourished child.
528	Schwartz.	Yes.	No.	No.	Yes.	—	General improvement in health.
529	Schwartz.	Yes.	No.	No.	Yes.	No.	—
530	—	—	—	—	—	—	No reply.
531	—	—	—	—	—	—	No reply.
533	—	—	—	—	—	—	No reply.
534	Schwartz.	Yes.	Yes.	No.	—	—	External otitis only present.
535	Schwartz.	Yes.	No.	No.	—	—	Healed; normal hearing.
536	Schwartz.	Yes.	No.	No.	—	—	Healed in three weeks.

hospital suffering from meningitis. She had had a discharge from one ear for years. On her admission to hospital she was unconscious. A radical operation was performed as a measure of desperation. Lumbar puncture was performed and 10 cubic centimetres of turbid fluid were withdrawn; the fluid contained 2,400 cells per cubic millimetre and pneumococci were present. The patient died on the third day; the year was 1937.

CASE 387.—A male patient, aged fifty years, had had chronic otitis with pain for two years. A conservative radical operation was performed. Lumbar puncture was performed after fourteen days; the patient was then suffering from meningitis. A brain abscess was drained after four weeks and the patient died two days later.

CASE 519.—A male patient, aged forty-one years, had undergone a Schwartz operation in the country two months before his admission to hospital; he had a discharge from the left ear and there was a sinus in the operation wound. Pronounced aphasia was present. A diagnosis of temporal lobe abscess was made. At operation the parietal lobe was trephined, the abscess was drained and a brain needle was left *in situ*. The discharge from the ear ceased and the wound healed; the patient went home in four weeks. He returned to hospital two weeks later, suffering from a recurrence of the discharge from the ear and of the wound sinus; a prominent brain hernia was present. At operation the mastoid wound was opened and the brain abscess was drained through the tegmen. Drainage continued for two weeks; the abscess had a very thick capsule. The patient's aphasia diminished greatly and then became worse; hemianopia appeared and the brain hernia again became prominent. The abscess was again drained in the parietal region and the patient died three days later.

#### 1940 Follow-Up Work.

A follow-up of the patients who had undergone Schwartz operations during 1940 gave the following information. In 19 cases the wound had healed, the ear was dry and hearing was normal, and in one case the ear was slightly moist; in two cases the operation had been converted to a conservative radical; one patient died from acidosis; four patients did not reply. The total number of Schwartz operations performed during this period was 27 (two patients had bilateral operations).

A follow-up of patients who had been submitted to radical operations gave the following information. In

three cases the wound was healed and the cavity was dry, and in three the wound was healed and the cavity was moist; the hearing of three patients was improved, that of two was unchanged and that of one was worse.

A summary of the cases included in this follow-up is given in Table IX.

#### A NEW TYPE OF PAVILION WARD FOR SANATORIA.

By J. BELL FERGUSON, M.D.,

State Director of Tuberculosis, Victoria,

AND

PERCY E. EVERETT, F.R.A.I.A.,

State Government Architect, Victoria, Melbourne.

THE demand for additional accommodation at sanatoria throughout the Commonwealth, arising from the mass radiography of the Australian Imperial Forces and from the expected extension of the survey to the civilian population, should necessitate the planning of wards capable of speedy construction. Such units would require also to be economically and efficiently planned.

Several new pavilion wards recently erected at Greenvale Sanatorium, Victoria, in accordance with principles advocated by one of us (J.B.F.) and embodied in designs prepared by the other (P.E.E.), have proved to be economical in capital outlay and easy to work in practice, and to require comparatively low expenditure upon maintenance. Visitors from other States have indicated their approval of the planning and arrangement of the buildings.

#### Description of the Pavilion Ward.

The accompanying plan (Figure 1) illustrates the simple layout and construction of these timber pavilions, the orientation ("A") of which is generally from north to east, to suit the site or locality. The boomerang shape has been found to offer ready supervision of patients, to protect

the verandas and wards from the sweeping effects of boisterous winds, and to afford patients a more interesting outlook than that provided by the usual straight, elongated type of veranda ward.

The building is 196 feet long by 56 feet broad in its widest part, and the ideal unit has 24 beds, 12 in each wing; the wings are "staggered" at an angle of 11° from the central duty room. There are five double-bed cubicles ("B") in each wing, each 14 feet long by 11 feet wide, and two single bed cubicles ("C" and "D") next to the duty room, each 14 feet long by 8 feet wide.

The central section of the plan comprises a nurses' duty room ("E") opening upon a veranda area 14 feet wide or upon an open-air lounge ("F"). At the rear of this duty room provision is made for a nurses' lavatory and store ("G"). Still further to the rear a well-equipped service kitchen ("H") is located. Cooking operations for the whole sanatorium, however, are conducted in a main kitchen block, from which electrically heated and insulated trolleys are wheeled to the pavilions and connected to electric power points ("I"), so that the food is maintained at the desired temperature.

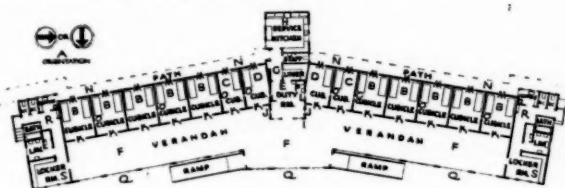


FIGURE 1.

From the duty room in the centre the nurse is afforded a complete view of the radial veranda areas through observation windows ("J"), to which bed patients from the flanking rows of two-bed wards may be wheeled through double doorways ("K"); or during emergency periods these verandas may be occupied by additional patients.

There are five double wards ("B") and two single wards ("C" and "D") on each side of the duty room. The smaller wards ("D") for patients who are very ill are placed conveniently to the nurses' duty room. Small circular windows ("L") in the partitions of the nurses' room enable the condition of these patients in the adjoining wards to be observed. At the rear of each individual ward there is a doorway ("M"), sufficiently wide for the passage of a bed. Nurses or wardsmen may obtain access to the wards directly from a covered way ("N"), which extends along the rear of the pavilion for its full length. This open-air passage-way may also be used as an emergency exit for the patients.

All wards and veranda areas have electric light and electric power points for radio, as well as low-level lamps ("O") within alternate partitions, to afford a dim night light within each ward. A push-bell service is provided to all the ward and veranda beds, communicating with a signal board ("P") in the nurses' duty room.

At Greenvale Sanatorium the whole of the veranda and window areas ("Q") are covered with screens of fly-proof wire. The rear doors ("M") of the wards are fitted with adaptable screens or with solid panels for summer or winter conditions. Complete air perfusion of the wards is assured through a ventilating aperture six inches wide, running the full length of the rear walls of all the cubicles above the head level of the doors ("M").

Sanitary accommodation ("R") for patients is provided at the end of each wing of wards, conveniently for patients who may be moving about outside the buildings. A room ("S") with twelve steel locking wardrobes and shelves for suitcases is also situated at the extreme end of each wing.

Existing facilities may be utilized or extended to provide hot-water services to the patients' lavatories, or electric units may be installed for this purpose.

#### Building Cost and Materials.

These pavilion wards are estimated to cost £4,000, exclusive of furnishings and equipment.

The wards are framed with hardwood, covered externally with rusticated seasoned and reconditioned hardwood weatherboards, and roofed with galvanized corrugated iron capped with ventilating ridging. Generally the walls of cubicles and other rooms have dadoes five feet high of "Masonite Presdwood", and the walls above the dadoes and all the ceilings are lined with fibrous plaster sheets. The internal walls of the verandas are lined to the full height with "Masonite Presdwood". The roofs over the isolation cubicles are insulated with "Turnall" metallic insulation for the sake of coolness in hot weather.

#### Summary.

These new type pavilion wards are considered to have the following advantages over other forms of accommodation:

1. They are cheap to build and maintain.
2. They are popular with the nursing staffs, owing to the ease with which patients can be attended to.
3. Facilities for grading patients are good.
4. The wide verandas allow extra beds to be provided in emergencies without risk of overcrowding.
5. There are facilities for rapid removal of the patients in case of fire.
6. The units are adaptable for the treatment of diseases other than tuberculosis—for example, fevers *et cetera*—and may be suitable for extensions to country hospitals.
7. These units may prove suitable for military hospital requirements, especially if they are constructed in permanent form for two or more storeys.

#### ENDEMIC TYPHUS IN PAPUA.

By A. J. MAY, M.B., B.S., M.R.C.P., M.R.A.C.P.,

Acting Chief Medical Officer, Port Moresby, Territory of Papua.

IN recent years the possibility of the occurrence of endemic typhus in Papua has been brought to the notice of medical men by the work of Gunther and others in the Mandated Territory of New Guinea. I have followed this work with great interest, and have long felt certain that a similar disease was present in Papua. Gunther mentions mites as the probable vectors, and scrub itch is found in many parts of this territory. In the district where my last case came from both rats and bandicoots are prevalent. I have seen two European patients from the same river valley, residing about half a mile from one another, both of whom had been engaged in gardening on newly cleared scrub land.

On December 9, 1940, a white man, aged thirty-three years, became ill with fever, shivering and headache. He thought he had malaria and took quinine, and he did not consult me until December 12, 1940, when I examined a blood film and found a few broken-down malaria parasites. I gave him an intramuscular injection of 0.3 gramme (five grains) of "Atebrin", and admitted him to hospital. His temperature showed no signs of subsiding and remained steady at about 39.2° C. (102.5° F.), despite further administration of "Atebrin", there being no remissions till the last few days of the disease. On the twelfth day the temperature rose to 40.6° C. (105° F.) and then fell temporarily to subnormal; lysis lasted about three days and the temperature remained normal from the fifteenth day. During most of the illness the pulse rate was 100 per minute and over; the pulse was feeble and of poor volume. Examination of the urine revealed an obvious cloud of albumin.

A rash appeared on the sixth day, scattered over the trunk and limbs and on the palms. It consisted of rose-coloured patches about as big as a pea, disappearing on pressure. It faded about the eleventh day. No eschar or enlarged glands were seen, although the ward sister reported that she had found a small superficial scab, easily washed off, on the scrotum.

Headache and insomnia were pronounced features in the early stages. Distressing hiccup and vomiting were present. The tongue was dry and furred. Incontinence of faeces and urine was present in the later stages, and at times pronounced air hunger was noted.

On the twelfth day blood was sent to Dr. Gunther to be tested. He reported that the serum agglutinated *Bacillus proteus* Kingsbury at a titre of 1/160, but failed to agglutinate *Bacillus proteus* Lister X2 or *Bacillus proteus* Lister X19 at titres of 1/20.

My other European patient from the same locality had a fever of about fourteen days' duration, of the same general character as the above, and resistant to treatment with quinine, "Atebrin" and sulphanilamide. No serological tests were carried out in this case. I saw no eschar on this patient, but at that time I did not realize the importance of looking for one. The patient eventually recovered.

I think it is very probable that endemic typhus has always existed in Papua, rather than that it is a recent extension from the north. The Administrator relates that in his early days here he did much walking in new country and contracted a fever which lasted between two and three weeks and yielded to no treatment; apparently it was not enteric. Other old residents have told me similar stories; they used to have buckets of water emptied over them in an effort to reduce the temperature. It is most likely that these persons suffered from endemic typhus.

Last year among the native orderlies at the Port Moresby Native Hospital there were three fatal cases of clinical endemic typhus. The fever was of about two weeks' duration and the cases occurred at intervals over about six weeks. No serological tests were carried out, and it is difficult to account for any source of infection. It was noticeable that the patients' quarters were heavily infested with bugs, and that after thorough fumigation there were no more cases. As a matter of course, the natives attributed it all to *pourri-pourri* (witchcraft).

#### Summary.

An attack of endemic typhus in a white man has been described from the Laloki River, near Port Moresby in Papua.

The clinical signs and serological reactions correspond fairly closely with those found in endemic typhus of New Guinea.

The disease belongs to the XK group of fevers, typified by *tsutsugamushi* by.

Clinical cases without serological confirmation have also been observed previously in both white men and natives in Papua.

It is probable that this disease has long been present in Papua, although this is the first proved case to be reported.

#### Acknowledgement.

I am greatly indebted to Dr. Gunther for his courtesy and help in preparing these notes.

## Reports of Cases.

### CONGENITAL ABNORMALITIES OF THE GENITALIA IN RELATED BATHURST ISLAND NATIVES.

By EDWARD FORD,

Major, Australian Army Medical Corps.

(From the School of Public Health and Tropical Medicine, University of Sydney.)

THE tendency for developmental anomalies to affect more than one member of a family is well recognized, and the malformations in such cases are frequently found to be similar in type. In an analysis of 1,125 American cases which occurred in families of more than one child, Macklin<sup>1</sup> found that 311 cases, or 27.6%, were in families in which two or more children were malformed. In 60 of the 311 cases the abnormalities were not identical in the various members of a family, though in the remaining 251, or 80%, they were similar in type. Murphy,<sup>2</sup> who studied a series of 884 families, in each of which appeared at least one congenitally malformed person, reported that in 40 of these

families there were two or more malformed brothers or sisters, while in 556 information was obtained of congenital abnormalities among relatives.

The cases briefly reported here were found in aboriginal inhabitants of Bathurst Island, which lies about 50 miles to the north of Darwin, North Australia. The anomalies in each case were of the genital organs and occurred in related persons.

#### Case I.

N., aged eighteen years, who was regarded as a female at birth and reared as a girl, was a sturdy, muscular, broad-shouldered person whose proficiency in swimming and games of strength was far beyond that of the girls with whom "she" associated. Because of the non-appearance of menstruation, as well as owing to the fact that, unlike her girls companions of the same age, "she" displayed no interest in boys or in marriage, she was regarded as abnormal by the women of the tribe.

Her general bodily appearance was masculine. There was no female distribution of fat about the hips and buttocks, and the development of the breasts was only slightly beyond that of the average male. The face was hairless, the axillary hair sparse and the pubic hair of female distribution.

Superficially the external genitalia were of normal female appearance. Closer inspection, however, revealed that the apparent *labia majora* were the two halves of a deeply cleft scrotum, each half containing an apparently normal testis, epididymis and cord. The cleft between the scrotal folds was of the length of the normal pudendal fissure, and was lined with pink moist epithelium. A short penis, having the appearance of an enlarged clitoris, was hidden between the two halves of the bifid scrotum. The glans, which was about 2.5 centimetres in diameter, pointed posteriorly and was tightly bound down within the cleft. It was not covered by the lax, retracted prepuce. The urethra opened in the mid-line posterior to the glans. The urethral orifice was labia on each side by short pink folds suggestive of *labia minora*. No vaginal opening was present.

The subject was apparently a hypospadiac male, with arrested external genital development. Further anomalous features were shown in the absence of facial hair, the female distribution of pubic hair and the slight breast development.

#### Case II.

M., aged about sixteen years, a cousin of the previous subject (their mothers were sisters) was similarly regarded as a female at birth, and was brought up as a girl. "She" had the appearance of a girl of eleven or twelve years, the underdeveloped condition being probably due to a heavy hookworm infestation from which "she" suffered. The genital condition was unsuspected, the examination being made on account of abnormalities existing in other related persons.

The breasts were undeveloped, the pubic hair was just appearing, and facial and body hair was absent.

On superficial examination the external genitalia were of feminine appearance, but, as in the previous case, the structures which closely resembled normally developed *labia majora* proved to be the two halves of a cleft scrotum. Each half contained a small oval structure resembling a testis. A hypospadiac penis, about two centimetres in length, was entirely hidden in the fissure. It was free for its whole length, and on the undersurface there was a groove lined by pink mucous membrane. This ran back to the urethral orifice, which was situated in the mid-line at the base of the penis. Two small fleshy tags, of unequal size and pink in colour, were situated on either side of the urethral opening. A vaginal orifice was not present.

The anomaly exhibited in this case is comparable with that of N. above, the pseudo-hermaphroditism being due to arrested development of the male external genitalia, with hypospadias.

#### Case III.

J., a male, aged three and a half years, whose mother was a half-sister to the mothers of the two previous subjects, exhibited complete hypospadias. The external genitalia were developed to a size normal for his age, and the testes were in the scrotum. The penile urethra was represented by an open groove extending from the glans to the base of the penis, where was situated the urethral orifice.

#### Case IV.

G., an adult male, who was seen on the neighbouring part of Melville Island, was said to be an uncle of the three persons mentioned above. He exhibited gynecomastia and genital hypoplasia. The face was smooth and hairless and the pubic hair sparse. The mammary development was that of an adult woman, and the breasts were lax and slightly pendulous. A close examination of the



puddendal region was not possible, though it was noted that the penis was underdeveloped. Although he had been married for many years he was childless and was referred to as "half-woman" by his associates.

#### Case V.

A male blood relation of the persons mentioned above, since deceased, was also said to have shown congenital malformation of the external genitalia. The exact relationship of this person to those noted above was not ascertainable. From the information received from native informants it is probable that the anomaly consisted of male pseudo-hermaphroditism similar to that found in N. and M. above. This person, also termed "half-woman", was said to have been reared, and subsequently married, as a girl. The marriage was unsuccessful and was terminated; but later a further marital attachment was formed, this time with the subject taking the part of a husband. It was not discovered whether there were children of this union.

#### Acknowledgements.

The cases described were observed during field work on Bathurst and Melville Islands, which was carried out for the Commonwealth Department of Health, under the instructions of Dr. W. B. Kirkland, Chief Medical Officer, Darwin.

#### References.

- ① M. T. Macklin: "Heredity as a Cause of Congenital Malformations", *American Journal of Obstetrics and Gynecology*, Volume XXXII, August, 1936, page 264.
- ② D. P. Murphy: "The Duplication of Congenital Malformations in Brothers and Sisters and among other Relatives", *Surgery, Gynecology and Obstetrics*, Volume LXIII, October, 1936, page 443.

### A CASE OF RHINOLITH COMBINED WITH CHOLESTEATOMA OF THE MAXILLARY ANTRUM.

By J. R. HUTCHEON, M.R.C.S. (England), L.R.C.P. (London), D.L.O. (England),

Assistant Surgeon to the Ear, Nose and Throat Department, Mater Misericordiae Public Hospital, Brisbane.

THE incidence of rhinolith combined with cholesteatoma of the maxillary antrum is fairly rare, and this furnishes some justification for recording this case.

#### Clinical Record.

The patient, Miss C., aged fifty-one years, first became aware of any abnormal condition in her nose about two years ago, when she began to have a mild post-nasal mucous discharge. This condition persisted without becoming much worse and without worrying her unduly. Two months ago she began to notice almost complete nasal obstruction on the right side and a fetid odour in the right nostril; there was hardly any purulent discharge from the nostril, though the post-nasal discharge of mucus had changed slowly to a mucopurulent discharge. In the last week or so she had noticed that her right cheek was a little more puffy than the left. There was no pain.

On examination of the patient her right nostril was found to be almost completely occluded by a large, fleshy, engorged mass, which appeared to be replacing the inferior turbinate. On being examined with a probe this mass bled fairly freely. The anterior bony wall of the right antrum was slightly pushed out, the cause of the puffiness in the right cheek; this, coupled with the easily bleeding fleshy mass in the nose, suggested a diagnosis of malignant disease. A radiographic examination was carried out and revealed a dense mass filling the right antrum, erosion of the naso-antral wall in its lower half, and a peculiarly dense shadow just on the nasal side of this erosion. The left antrum was clear.

It was therefore decided that the right antrum must be opened, and this was done the next day (January 6, 1941) by the usual Caldwell-Luc method via the canine fossa. As soon as the first gouge cut was made in the bony antral wall, a small amount of thin pus welled out, and then, when the antrum was properly opened, it was found, apart from a few polypi lining the outer wall, to be completely full of a very thick, yellow, cheesy mass—cholesteatoma of

the antrum. This was removed a piece at a time, until the nasal wall was reached, and this was found almost completely eroded in its lower half and replaced by a rhinolith—a greyish-black, mulberry-like, laminated stone, fully an inch in length and nearly as thick. This had to be broken into pieces before it could be removed via the canine fossa opening. Then the small anterior end of the inferior turbinate (all that was left of the turbinate) could be seen in the front of the nose, pressed forward to fill the nostril. This was removed. All the antral polypi and any shreds of mucosa that were left in the antrum were also removed (most of the mucosa was very much thinned out by pressure), and as the intranasal opening had been made by the rhinolith, nothing further needed to be done. Four days later the antrum was washed out via the nose, but no fragments of rhinolith were found in the washing, so further treatment consisted only of keeping the nose clean.

#### Discussion.

The most interesting feature of this case is that the symptoms and signs were much more suggestive of carcinoma of the antrum and adjacent nasal wall than of any other diagnosis.

The second interesting point is the amazing lack of discomforting symptoms until two months earlier; both the rhinolith and the cholesteatoma must have been growing for at least twelve months. In fact, most of the usual symptoms were missing in this case. The presence of a rhinolith is usually proved by the metallic clinking produced on pushing against it with a probe; in this case the rhinolith had eroded the naso-antral wall and most of the inferior turbinate, leaving about one-quarter of an inch of the anterior end of the latter, which it was pushing forward to occlude the nostril, thereby effectively guarding itself from contact with the probe. The engorgement produced in this turbinate tip explains why it bled so freely, suggesting malignant disease. The obstruction of the nostril also explains the lack of exorating discharge from this nostril, which any foreign body will produce. In view of the small area of thickened polypoid mucous membrane in the outer angle of the antrum and the small amount of pus which escaped when the antrum was opened, it seems that the sequence of events must have been as follows. A chronic right maxillary sinusitis produced polypi and thickening of the mucosa of the antrum and a fair amount of mucous discharge which tended to become purulent. A small clot of pus passed through the antral ostium into the middle meatus, slid to the floor of the nose and settled in the inferior meatus. This formed a nidus for the deposition of salts, mainly calcium phosphate, and the rhinolith was formed and grew in size, slowly eroding the naso-antral wall. The pressure thus exerted on the pus in the antrum slowly caused the formation of the cholesteatoma, and this in turn growing in size caused pressure on, and bulging of, the anterior wall of the antrum.

After the rhinolith was removed from the antrum it was broken into small fragments to find the nidus, but nothing could be found except a small cavity the size of a large grape seed, suggesting that a clot of pus or blood had been there originally.

It is interesting to note that Sir St Clair Thomson attributes the origin of the deposited salts in the rhinolith in some part to the nasal mucus, but much more so to the tears. This case lends weight to this theory, as the stone was formed in the inferior meatus at the lower end of the nasal duct. On the whole, this case illustrates what can happen if a rhinolith is left undisturbed; in most cases symptoms are caused which bring the patient to medical aid long before this stage is reached.

#### SPONTANEOUS ABSORPTION OF CATARACT.

By W. M. Box, M.B., B.S., D.O.M.S., F.R.A.C.S.,  
Acting Ophthalmic Surgeon, Alfred Hospital; Ophthalmic Surgeon, Williamstown Hospital, Melbourne.

THE following history is regarded as being sufficiently uncommon to report.

#### Clinical Record.

B.H., a male patient, unmarried, aged thirty-six years, was employed as a clerk. He had been in the care of my father, the late John Box, and he had been known for the past eighteen years to have opacities in the lenses of both eyes, regarded as probably of congenital type. In 1930

vision in the right eye was 6/6 partly, with a 0.75 diopter convex spherical lens and a 0.75 convex cylinder with its axis at 65°. An immature cataract was present in the left eye, vision of which was limited to perception of hand movements; projection was good.

In 1931 the patient had a spontaneous right vitreous hemorrhage, which reduced vision in the right eye to 6/24; under treatment vision gradually improved to 6/6 partly. The Wassermann test failed to produce a reaction. There was a family history of tuberculosis, and the condition was regarded as Eale's disease.

The patient was first seen by me on October 5, 1932. At that time vision in the right eye was 6/9 partly, and opacities were present in the right vitreous and lens. Vision in the left eye was confined to perception of hand movements; an immature cataract was present and projection was accurate. The patient was carrying on satisfactorily with his clerical work.

On January 2, 1935, he reported to me, saying that vision in the left eye had improved and that in the right eye had deteriorated. Vision in the right eye was 6/9 (four letters) with a 0.75 diopter convex spherical lens and a 0.75 convex cylinder with its axis at 65°. Keratic precipitates were present, and there were opacities in the vitreous and lens. The eyeball was tender and ciliary injection was present. The condition was regarded as tuberculous irido-cyclitis. The left eye was aphakic, but the patient denied that he had undergone operation or met with an injury to the eye. No intraocular foreign body was detected by X-ray examination, and no corneal scar was present. Slit lamp examination revealed that the posterior lens capsule was intact, some soft lens matter was present, and there was a temporal gap in the anterior lens capsule. Vision in the left eye was 6/18 partly, measured with a 12.0 diopter convex spherical lens and a 2.0 convex cylinder with its axis at 90°.

On August 21, 1935, a needling operation was performed on the left eye when the condition of the right eye had settled down under treatment. At this stage the opacities in the right lens had progressed considerably; vision in the right eye was 6/60. After the needling vision in the left eye was 6/6 partly, measured with a 13.0 diopter convex spherical lens and a 2.0 convex cylinder with its axis at 90°, and "J.1" with a 3.0 diopter convex spherical lens added.

#### Discussion.

The interesting feature of this case was the spontaneous absorption of the left cataract in the absence of any history of injury. Two years later vision in the left eye was still 6/6 partly. When last heard of in 1939 this patient was in hospital undergoing treatment for pulmonary tuberculosis.

## Reviews.

### VENEREAL DISEASE.

LIEUTENANT-COLONEL E. T. BURKE expects criticism of his book "Venereal Diseases", for in his preface he writes: "I know full well that many of the opinions I hold are at variance with general teaching. They are, however, based upon a study of syphilis and gonorrhoea extending for over a quarter of a century. Some view-points—such as the lipid concept of syphilis; the mode of action of arsphenamine, bismuth, iodine, and mercury; the bacteriology of gonorrhoea; and the evaluation of antisyphilitic therapy—must certainly clash with the ideas of many who will have to review these pages; but it is precisely these things which experience shows has stimulated the interest of those who have attended the classes at London Hospital Medical College and at Whitechapel Clinic."

One who can stimulate interest in venereal diseases, as Burke can, and who writes with over a quarter of a century of experience behind him, and with a growing reputation through those years, need not worry very much if his views do, at times, clash with those of others. He has imagination, and he has created a book by which he will be remembered.

It is obvious that his chief interest lies with the control of syphilis. One is led step by step through the theory of infection and classification of degree of infection to com-

plications, treatments and end results. He emphasizes the use of iodine in the therapy of syphilis, and suggests that when the potassium salt is administered the dosage for an adult should not be less than 90 grains a day if it is to have continuous and effective action. He favours the intravenous injection of Crookes's "Collosol Iodine New Sol." (C.I.N.S. 0.8%).

The continuous alternating system of treatment is recommended for acute syphilis, with no rest periods.

The section dealing with gonococcal infections is carefully compiled; but the references to the use of sulphapyridine and its reactions are too brief.

The chapters dealing with chancroid and trichomonas infection give satisfactory guidance in modern methods.

Hyperthermy in treatment of venereal disease is allotted a chapter, the Kettering hypertherm is described, and also the meticulous routine necessary in its use. Burke claims that the Kettering hypertherm is a *sine qua non* in modern treatment of the complications of gonorrhoea, especially those of a metastatic nature, such as arthritis, iritis and salpingitis.

The routine recommended for prophylaxis appears too exacting for general acceptance, and the sealing of the meatus with collodion prior to the application of the ointment containing calomel leaves a possibly infected area sealed against the protection of the ointment.

The book is well illustrated and clearly printed, and the student and practitioner seeking guidance will find advice that will leave them unconcerned and capable of giving a reasoned service and of obtaining satisfactory results.

Though this manual "does not purport to cater for the expert venereologist", it should be added to his library, for it will give him food for thought even though he may not agree with some of the opinions expressed.

### HUMAN PARASITOLOGY.

In the fourth edition of "A Guide to Human Parasitology", by Blacklock and Southwell,<sup>1</sup> slight modifications have been made to the third edition, which was reviewed in THE MEDICAL JOURNAL OF AUSTRALIA of December 24, 1938.

The book is a clear and well-arranged short guide to its subject, excellent as a text-book for short courses in human parasitology and as an aid to the medical man in civil or military life who may at times have to make unaided a precise diagnosis of human diseases caused by animal parasites.

### ENDOCRINE THERAPY.

In "Endocrine Therapy in General Practice" Elmer L. Sevringhaus has endeavoured to produce a book of moderate size which will be of value to the busy general practitioner who in the course of his work must inevitably see a large number of patients suffering from disorders of the ductless glands.<sup>2</sup> In addition to a description of these glandular disturbances (including *diabetes mellitus*) there is a useful chapter on obesity and its treatment. The text is illustrated by a number of photographs which should be very helpful to the practitioner. The value of the book is enhanced by the diet lists in the chapters on *diabetes mellitus* and obesity, and by a list of "references for further reading" appended to each section.

In therapy the preparations recommended are almost exclusively those produced by the American manufacturers. To the Australian practitioner this is a distinct disadvantage, as a large number of these products are not readily obtainable in this country.

The fact that this book has reached its third edition within two years is an indication of its popularity in the United States. It can be recommended as a useful addition to the practitioner's library.

<sup>1</sup> "A Guide to Human Parasitology for Medical Practitioners", by D. B. Blacklock, M.D., D.P.H., D.T.M., and T. Southwell, D.Sc., Ph.D., A.R.C.Sc., F.Z.S., F.R.S.E.; Fourth Edition; 1940. London: H. K. Lewis and Company Limited. Royal 8vo, pp. 268, with illustrations. Price: 12s. 6d. net.

<sup>2</sup> "Endocrine Therapy in General Practice", by E. L. Sevringhaus, M.D., F.A.C.P.; Third Edition; 1940. Chicago: The Year Book Publishers. Demy 8vo, pp. 239, with illustrations.

<sup>1</sup> "Venereal Diseases", by E. T. Burke, D.S.O., M.B., Ch.B.; 1940. London: H. K. Lewis and Company Limited. Demy 8vo, pp. 566, with 133 illustrations and 6 coloured plates. Price: 30s. net.

## The Medical Journal of Australia

SATURDAY, APRIL 12, 1941.

*All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.*

*References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: Initials of author, surname of author, full title of article, name of journal, volume, full date (month, day and year), number of the first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.*

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### THE MEETING OF THE FEDERAL COUNCIL.

FROM the report published in this issue it will be seen that the recent meeting of the Federal Council of the British Medical Association in Australia dealt with a wide range of subjects and devoted a great deal of time and discussion to them. We have always held that the meetings of the Council are of the first importance to members of the profession in Australia, that the proceedings should be reported as fully as possible and that members of the Branches should try to make themselves conversant with the diverse problems awaiting solution and with the attempts made to solve them. That the most abysmal ignorance still exists regarding even the composition of the Federal Council and the method of its election became evident recently when a senior member of the profession, who belongs to the staff of one of the large teaching hospitals, began to let off steam against what he said were the faults and failures of the Federal Council. By his initial statement that little benefit could be expected to accrue to the practising members of the profession because the Federal Council was composed largely of representatives of the public health departments, it was at once obvious that this man did not know the difference between the Federal Council and the National Health and Medical Research Council. It eventually transpired that his ignorance covered not one but both bodies. In the face of this kind of thing we are glad that the Council, when it was faced with the difficulties reported by the Queensland Branch in regard to the publication of names in the lay Press, did not place any general proscription on the publication of detailed discussion in THE MEDICAL JOURNAL OF AUSTRALIA. At the same time the Queensland Branch and others who share its views may rest assured that every care is taken in the reporting of council proceedings and that when it appears unwise to make certain matters public they are not mentioned.

Pride of place in the deliberations at the recent meeting must be given to the lengthy discussion of all those matters

included under the heading of war emergency organization. Reference to the leading article of the issue of October 5, 1940, will show that at the time of the September, 1940, meeting of the Federal Council there was doubt in the minds of many as to the effectiveness of the Central Coordination Committee and of the committees in the several States. Nothing but the most serious considerations would have compelled the President of a Branch to address the Federal Council in person, as Professor W. K. Inglis did last September. Although the Branches did not see fit to endorse the scheme put forward by the New South Wales Branch, there were still signs at the present meeting that everyone was not quite happy about the coordination of the activities of the medical profession in the present state of emergency. We venture to hope that the changes recently announced will be effective and that the appointment to the Central and State Committees of a deputy chairman who is a practising member of the profession will make good many deficiencies. At the same time it must be pointed out that the several coordination committees still have no executive power and their real effectiveness will still depend on the willingness of everyone concerned to cooperate in the difficult work that must be faced. While we have no wish to prejudice the work of the committees in any way, we may perhaps point out that the immediate problems of coordination include the coordination of the claims that the medical services of the three branches of the defence forces may make on medical practitioners, the prevention of overlapping of appointments that would follow the advent of a state of emergency within the Commonwealth, the provision of adequate teams in civil hospitals in the same circumstances, and the discovery of suitable places for the transfer of patients from civil hospitals should this be necessary. Members of the profession who are anxious about these matters are advised to be patient until the new arrangements in the hands of the newly appointed Director-General of Medical Services have been given sufficient time to be tested.

From the report of the meeting it will be seen that the medical profession has been approached in regard to attendance first of all on the widows, orphans and widowed mothers of men serving with the defence forces in the present war, secondly on the dependants of members of the armed forces, and thirdly, on members of the Permanent Military Forces and their dependants. It is also satisfactory to note that in every instance it has been possible to accede to the request. The arrangement in every case is that service shall be in terms of the Federal common form of agreement; this, it should be noted, is a concessional service—all contract practice is practice at a concessional rate. In the service to widows, orphans and widowed mothers of men serving with the forces in the present war there is an additional concession in that no examination is required before names are placed on the list. In view of the successive inroads of contract practice we cannot but approve the recording of the fact that the service offered to the Repatriation Department in response to its request is at a concessional rate. Two other matters under the heading of war emergency organization call for emphasis. In the first place, nothing but good can come of the raising of the question of fatigue that followed receipt of a letter by the Council from Dr. J. Newman Morris. This has exercised the minds of those in charge



of the war effort in the Old Country and it is overdue for consideration in Australia. The subject is such a large one that any account of what has been done in England must be left for another occasion. In the second place the proposal that the examination of recruits for the militia should include an X-ray examination of the chest has everything in its favour. It will not only make for an efficient force for the defence of the Commonwealth, but it will, if adopted, discover much latent and active tuberculosis in the community. The authorities will, we trust, be far-sighted enough to adopt the suggestion.

That the report on a general medical service for Australia was not fully considered by the Federal Council is a matter for great regret. It was unfortunate that several of the Branches reported that they had not been able to examine the document in detail. Dr. T. A. Price was undoubtedly right when he insisted that the completed draft should be made public "before the end of the war", so that those most affected should be able to realize the aims of the medical profession. This is the intention of the Federal Council. The present arrangement is that the Branches shall consider the scheme and send their suggestions to the General Secretary of the Council as soon as possible so that a final draft shall be available for the next meeting. The medical profession must be careful lest by procrastination it gives an impression of lack of interest.

The final matter to which attention will be drawn is the proposal that a fund shall be started for the relief of distressed medical practitioners in Great Britain. Many of our medical colleagues on the other side of the earth have lost all their possessions and many have suffered injury and been incapacitated. There is no one in this Commonwealth who has not been filled with admiration for the courage and endurance displayed by the people of Great Britain in the face of the enemy. There can be few who do not realize the sufferings of the afflicted and there is surely no practitioner of medicine in Australia who will not, even at personal sacrifice, stretch forth his hand to help his sorely stricken colleagues.

#### THE DIRECTOR-GENERAL OF MEDICAL SERVICES.

In the Naval, Military and Air Force news this week readers will find a report of the appointment of Major-General F. A. Maguire as Director-General of Medical Services. The appointment is gazetted as a temporary one. Major-General R. M. Downes, who previously held the office, has relinquished it temporarily to become Inspector-General of Medical Services. The office of Director-General carries with it grave responsibilities, and heretofore the position has been peculiarly difficult by reason of the fact that the Director-General was not a member of the Military Board and had no direct access to it in matters concerning his department; all his recommendations had to be sent through the Adjutant-General. In September, 1940, the Federal Council of the British Medical Association in Australia discussed army medical administration because of a complaint that was made by certain persons to the Prime Minister. The Federal Council made certain recommendations and among them was one to the effect that the Director-General should be a member of the Military Board. Nothing came of this recommendation,

but at length a change has taken place. Major-General Maguire informs us that when he was asked by the Minister to accept the post of Director-General he agreed to accept on the understanding that he should have direct access to the Military Board. This the Minister has granted. A forward step of great importance has thus been made. In wishing Major-General Maguire success in the high administrative duties to which he has been called, we would congratulate him on his insistence that he should have direct access to the Military Board.

The medical profession also knows that Major-General Downes has for many years served army medicine with untiring zeal and will wish him well in his new and important supervisory position.

### Current Comment.

#### THE USE OF DESICCATED PLASMA.

It is generally realized that the essential aim of the treatment of shock is the restoration of blood volume. The more profound the shock, the more urgent it is to bring about this restoration before irreversible damage to the capillaries has occurred. Blalock has shown that transfusion of even greater amounts of blood than that lost by hæmorrhage may not restore adequate circulation, particularly when the shock is severe and prolonged. Most clinicians have at some time or another realized the truth of this. J. M. Hill, E. E. Muirhead, C. T. Ashworth and W. D. Tigertt<sup>1</sup> advocate the use of hypertonic plasma followed by whole blood transfusion in the treatment of severe shock due to hæmorrhage. They base this advice on the results of the treatment of 45 persons suffering from severe shock, all of whom received hypertonic plasma by the intravenous route. While admitting that a critical estimate in cases of this type is impossible, they record their definite impression that some of these patients would have responded to no other form of treatment. The plasma used was obtained partly as a by-product of the blood bank of the Baylor University Hospital, and partly from blood taken directly for this purpose. They claim that a completely neutral plasma can be produced by adsorption of agglutinins when the different types of whole blood are pooled at low temperature. Care must be taken to neutralize the O plasma of high titre; some workers avoid the use of O plasma altogether. Hill and his associates place the neutral plasma in large ampoules of 500 cubic centimetres capacity and it is desiccated in bulk from the frozen state. At first the dry material was made into a solution four times as concentrated as normal plasma and stored frozen. Recently the dry material has been granulated, weighed and placed in bottles. For storage a vacuum is drawn in these bottles, or else dry nitrogen is introduced by way of a hypodermic needle and the rubber cap sealed with celloidin. Practically all the plasma was given as the four times concentrate, a syringe of 50 or 100 cubic centimetre size, and a 19 or 20 gauge needle being used. In shock the dose was given rapidly, up to 100 cubic centimetres being given per minute. In other conditions the speed was judged by the apparent integrity of the cardio-vascular system. Frequently an injection period of five minutes was satisfactory for the average 100 cubic centimetre dose. In cases in which a sudden increase of blood volume was considered dangerous, slower rates of up to twenty minutes were recommended. When possible, the blood volume changes were followed by laboratory tests, such as blood and plasma specific gravity estimations, hæmatocrit estimations, red cell counts and hæmoglobin estimations. The use of laboratory tests, however, proved somewhat disappointing, especially when hæmorrhage was a factor.

<sup>1</sup> *The Journal of the American Medical Association*, February 1, 1941.

There are, of course, numerous reports on the use of whole plasma, but comparatively few on the use of concentrated plasma. The great and obvious advantage is the rapidity with which 100 or 200 cubic centimetres of plasma may be administered. In severe shock, such as occurs, for instance, in some obstetric emergencies, the time factor is all-important. For military use concentrated plasma has many advantages. Its small bulk, perfect storage and the simplicity of its administration by syringe, the speed of administration and the rapidity of therapeutic action all commend it. In all, Hill and his co-workers administered concentrated plasma to 299 patients. An elaborate table gives the essential features of their 45 cases of shock, and a summary of the remaining cases includes the following groups: shock prevention, hypoproteinaemia, eclampsia and other obstetric conditions, severe infections with terminal collapse, neuro-surgical conditions and head injuries, burns, and hæmolytic anæmia. The obstetric group is of interest; the authors state that the successful treatment of eclampsia by hypertonic plasma will be recorded elsewhere. They also point out that prolonged preservation of antibodies, prothrombin and complement in plasma can be accomplished only by desiccation from the frozen state. The preparation of dried plasma is being studied in various parts of the Commonwealth at the present time; it is to be hoped that this valuable and potent therapeutic agent will soon be available in many Australian hospitals.

#### MALNUTRITION IN SOUTH AFRICA.

SOUTH AFRICA has been spoken of as the most prosperous country in the world. It has also been said that South Africa is a country of poor whites and poorer blacks. Both statements, probably, are true; but the second is true of a much larger section of the population than is the first. And the worst result of this poverty is malnutrition. In a communication entitled "Malnutrition in South Africa", E. M. Radloff and T. W. B. Osborn<sup>1</sup> present a clear but concise review of the situation. This paper commences with a brief but very rational mention of the principal dietary essentials and then passes to a discussion of data regarding South African diets. No one, they state, contests the proposition that there is serious dietary deficiency among the poorer sections of the European population, and it is generally assumed that many natives in urban areas and in overcrowded reserves have an inadequate diet. Also it is widely believed that the diet of the more affluent members of the community is often suboptimal in some of the essential factors. But what is needed is a translation from this vague awareness of undernourishment to a certain knowledge that "this individual" or "this group of people is deficient in this or that essential dietary factor".

This the authors have attempted to do with what little data there is at their disposal. They are fully aware, however, of the variation of the content of foods, of the variation in requirements of normal healthy adults, and of the fallacy of averaging. In a nutrition survey involving a clinical examination of children it was found that over 36% of those examined were malnourished—the percentage being highest for the Orange Free State (42.6%) and lowest for Natal (16.4%). Evidence from other sources points to the same grave degree of malnourishment. A large number of young men examined annually for recruitment to the Active Citizen Force show clear evidence of undernourishment during childhood in various degrees of body deformities. Outbreaks of scurvy and pellagra in native territories betray gross vitaminic deficiency in the diet, while less complete absence of protective substances in the food eaten shows itself on every hand to those who wish to look for it.

<sup>1</sup>"Malnutrition in South Africa": Ellen M. Radloff, B.Sc., Hons. (London), Ph.D. (Yale), and T. W. B. Osborn, D.Phil. (Oxon), D.Sc. (Rand), L.R.C.P., M.R.C.S., Lecturers in the Department of Physiology, University of the Witwatersrand, Johannesburg, 1939.

This inadequate consumption of protective foods is, of course, due largely to economic causes. In this regard it is a noteworthy fact that at present quite inadequate amounts of these foods are being produced in South Africa. Even if all the foods produced were available for home consumption, there would not be enough of them to provide a balanced ration for the whole population. As a plan for immediate remedial action the authors suggest the pharmacological approach to the problem. They have calculated that in this way an individual could be placed out of danger of calcium, vitamin A and vitamin D deficiencies for the small price of one shilling and sevenpence per year. Vitamins B and C would be a little more expensive to supply, but the cost still is far from prohibitive. Moreover, one of the greatest dangers of pharmaceutical treatment is absent in the case of vitamins—the toxic dose is so much in excess of the therapeutic dose that it gives no cause for anxiety. These suggestions, however, have been put forward only as emergency measures and must be regarded solely and entirely as such. On no account must they be allowed to postpone progress in the solution of the real problem. For too long in South Africa, as in other parts of the Empire, public health has played second fiddle to economics.

#### A BLOOD TRANSFUSION SERVICE FOR NEW SOUTH WALES.

SHORTLY after the publication in the issue of March 22 of a leading article on the activities of the Australian Red Cross Society in Melbourne and other States, information was received that an emergency transfusion service for New South Wales is being organized by the New South Wales Division of the Australian Red Cross Society. It is based, we are informed, on the principles set out in the report of the subcommittee of the New South Wales State Medical Coordination Committee, which had access to the details of the London scheme that has worked so well. The Coordination Committee has offered the services of its subcommittee to the Red Cross Society to act in an advisory capacity, and this offer has been accepted. The Society has portion of a suite of rooms in Bull's Chambers, Martin Place, where the enrolment of donors for the metropolitan area is proceeding; it also has the full-time services for three months of a medical officer and adequate clerical and technical assistance. The service is being organized primarily to meet the threatened emergency; it is not proposed to extend it immediately to cover all civil needs, but this will be done at a later date. It is, however, proposed to prepare serum for storage. The personnel of the subcommittee is: Dr. A. H. Tebbutt (Chairman), Professor W. K. Inglis, Colonel A. M. McIntosh, Dr. E. M. Day, Dr. F. B. Byrom, Dr. E. L. Morgan and Dr. A. D. Gillies (honorary secretary). The transfusion medical officer is Dr R. J. Walsh. Major E. B. Jones and Major E. F. Thomson were members before their departure abroad. A similar organization is being established by the Red Cross Society in the Newcastle district, and steps are being taken to appoint a subcommittee there. The organization of services in the other provincial industrial areas will proceed as soon as the Newcastle service is established.

#### JUBILEE OF THE AMERICAN JOURNAL OF SURGERY.

WITH the issue of January, 1941, *The American Journal of Surgery* celebrates its fiftieth birthday. The special number records the enormous strides made in surgery during the last half-century. Thus the journal perpetuates its tradition, for it has throughout its long life been a reliable guide to American surgeons in search of knowledge. On behalf of the medical profession in Australia we offer congratulations and good wishes for the future.

## Abstracts from Medical Literature.

### THERAPEUTICS.

#### Sulphathiazole in Pneumococcus Pneumonia.

A CLINICAL study of the value of sulphathiazole is reported by Italo F. Volini *et alii* (*The American Journal of the Medical Sciences*, December, 1940), who gave the drug by mouth to a series of 169 patients. Sulphathiazole is apparently readily absorbed from the gastro-intestinal tract, high blood levels are quickly attained and excretion in the urine occurs at a rapid rate; the degree of conjugation in both blood and urine is much less than with sulphapyridine; consequently a larger percentage of the total drug absorbed into the blood stream is therapeutically active. The toxic manifestations are similar to those experienced with sulphanilamide and sulphapyridine, but they are distinctly less frequent and milder; drug fever and drug rashes appeared in five cases. The dosage consisted of four grammes initially, followed by one gramme every four hours, day and night, until the temperature remained normal for forty-eight hours; it was found that the blood level varied considerably in the same individual on this dosage, which was proved to be therapeutically effective. The mortality rate was 5.3%, as compared with 4.2% in a control series treated with sulphapyridine and serum. It is concluded, however, that sulphathiazole is apparently equally as effective a therapeutic agent as sulphapyridine in the treatment of pneumococcus pneumonia. The clinical impression of the patient on sulphathiazole is compared with that of the patient taking sulphapyridine in his relative comfort, the absence of vomiting and the greatly diminished indication for the parenteral administration of fluids.

#### The Treatment of Pneumococcal Pneumonia.

FRANCIS G. BLAKE (*The New England Journal of Medicine*, October 24, 1940) discusses the treatment of pneumococcal pneumonia and presents an analysis of the results of treatment of 250 patients, of whom 109 were treated with sulphapyridine alone, 41 with sulphapyridine and antipneumococcal rabbit serum, and 100 with sulphathiazole. With this group of patients, the author found that chemotherapy appeared to be the most satisfactory method in the treatment of pneumococcal pneumonia; that chemotherapy alone was adequate in effecting prompt recovery of nearly all patients under forty years of age, and was therefore the best method in this age group; that chemotherapy was less adequate, though often efficient in the later decades of life, except in those suffering from severe chronic disease; that chemotherapy alone was more effective in late severe bacteriemic pneumonia than serum therapy alone; and that in selected cases of the late severe bacteriemic type combined serum and chemotherapy seemed advisable. The author found sulphathiazole to be the most satisfactory chemotherapeutic drug because it was at least equal to sulphapyridine in therapeutic effect, its administration was accompanied by less

nausea, vomiting and mental depression, other untoward reactions were less frequent and severe, and excessive acetylation was not encountered. In an analysis of some of the factors affecting the character of clinical response to chemotherapy, the author states that the type of pneumococcus involved is of little significance; that bacteriemia *per se* is not so important as is often supposed; that delayed institution of treatment is attended by less satisfactory results than is early treatment; and that the most significant factor is age, as the majority of patients in this series who did not promptly recover and eventually developed complications or who showed complete lack of response with fatal outcome, were over fifty years of age.

#### Treatment of Asthma.

ETHAN ALLAN BROWN (*The New England Journal of Medicine*, November 21, 1940) presents a new type of medication to be used in bronchial asthma and other allergic conditions, and reports on the results obtained with its use in a series of 140 sufferers of bronchial asthma. Gelatin capsules containing half a grain of ephedrine sulphate, half a grain of sodium phenobarbital and three grains of theophylline sodium acetate were administered orally and found to be more effective in the symptomatic and prophylactic treatment of bronchial asthma than ephedrine and phenobarbital either alone or combined with other purines. An enteric-coated tablet of the same medicaments that did not dissolve for three and a half to five hours was administered to patients on retiring whose symptoms began in the early morning hours, and the administration of a capsule and tablet assured a full night's sleep for those patients whose symptoms began at irregular intervals. The author also states that the use of the capsule and the tablet enhanced the effect of epinephrine in aqueous solution or epinephrine in oil in the more severe forms of asthma. He found the combined oral administration of a capsule and a tablet was effective in controlling symptoms for twelve to fourteen hours or more in patients who had had several attacks of asthma in a similar control period, and that these same patients, spared the physiological and psychological upheaval of the unexpected attacks that occur during the night some six or more hours after retiring, had less asthma during the day and for some subsequent nights when medication was omitted.

#### Vitamin E in Amyotrophic Lateral Sclerosis.

I. S. WECHSLER (*The American Journal of the Medical Sciences*, December, 1940) gives his results of an investigation into the effect of administration of natural and synthetic vitamin E in amyotrophic lateral sclerosis. Following a previous encouraging report, a series of twenty cases were studied in detail; it is pointed out that chronic encephalitis, vascular disease, possibly luetic, and certain bulbar syndromes are etiological factors which would indicate that vitamin E is useless. In this so-called degenerative group there has been a marked response in some cases; privation of vitamin E seems to play a specific role in the causation in this group. Dietary deficiency, gastro-intestinal and hepatic disease, and possibly the absence of other vitamins may play additional causative roles. It is worthy of note

that females respond far better to therapy than males, and particularly those of premenopause age. The treatment consisted of administration of a-tocopherol acetate by mouth, 50 milligrammes a day; it is thought that the dosage may have to be increased to 200 milligrammes a day. In half the cases 50 milligrammes of tocopherol in oil were injected intramuscularly every day. A high vitamin E diet was administered: lettuce, whole-wheat bread, coarse cereals, butter. Bile salt therapy may assist in absorption, for vitamin E is fat-soluble. In some cases vitamin B complex was added. In two cases it was possible to show that stopping the administration of vitamin E brought about a relapse which promptly was reversed the moment vitamin E was readministered. Response is fairly rapid if treatment is going to be effective, and cases must be selected in view of varying aetiology.

#### The Antipyretic Action of Sulphapyridine.

P. B. BEESON AND C. A. JANEWAY (*The American Journal of the Medical Sciences*, November, 1940) present clinical examples in which it appeared that the fall in body temperature following the administration of sulphapyridine was due to an antipyretic action of the drug rather than to any effect on the infective process. They found that in normal rabbits sulphapyridine caused significant lowering of the body temperature. As far as they could ascertain, most of the antipyretic action of sulphapyridine was due to increased dissipation of heat from the skin.

#### The Action of Acetylsalicylic Acid on Teeth.

D. B. DOTT (*Edinburgh Medical Journal*, October, 1940) suggests that so strong an acid as acetylsalicylic acid might have a deleterious action on the teeth if applied frequently, even though the period of contact was brief. He took healthy teeth, coated them with wax except on the parts that normally project from the gums, and suspended them in two fluid ounces of a solution containing five grains of aspirin; appreciable decalcification of the teeth occurred in a short time. The author remarks that how far the facts noted should limit the use of aspirin as a mouth wash is a question for medical decision.

#### Toxic Effects of Sulphamethylthiazole.

A. E. BROWN AND W. E. HERRELL (*The American Journal of the Medical Sciences*, November, 1940), after treating 106 patients for various bacterial diseases with sulphamethylthiazole, concluded that the danger of muscle weakness due to affection of lower motor neurones following its use made it an unsuitable drug for the treatment of mild infections due to *Staphylococcus aureus*. However, they thought it might "still find a field of usefulness" in the presence of fulminating infection, such as septicæmia.

#### The Effect of Nicotinic Acid on Blood Coagulation.

R. M. CALDER AND GRACE P. KERBY (*The American Journal of the Medical Sciences*, November, 1940) found that the addition of nicotinic acid to the blood of persons suffering from brucellosis reduced the clotting time,



which is abnormally slow in this disease; that a 0.6% solution of nicotinic acid applied by cotton pledget to tooth sockets after extraction caused a firm permanent clot to form in from one to two minutes; and that local application to small cuts caused an immediate stay of the bleeding. Experiments showed that nicotinic acid does not act because it possesses the action of any of the factors involved in normal coagulation, for none of which can it be substituted. Further experiments, however, appeared to show that nicotinic acid neutralizes antithrombin *in vitro*; but the authors thought it unlikely that its coagulant effect *in vivo* was produced by this means. They suggest its further trial in various hemorrhagic states.

## NEUROLOGY AND PSYCHIATRY.

### Hypoglycæmia and the Autonomic Nervous System.

THE use of insulin in the treatment of schizophrenia has called renewed attention to the condition of hypoglycæmia; and Jan Droogleever Fortuyn (*The Journal of Nervous and Mental Disease*, January, 1941) has made minute studies of both sympathetic and parasympathetic symptoms which follow large doses of insulin. Among the sympathetic symptoms he finds alterations in the blood pressure, leucocytosis and acceleration of the pulse rate. Increased gastric motility and secretion he regards as parasympathetic symptoms. Dermographia is altered in hypoglycæmia. From simultaneous records of blood sugar level, leucocytosis and gastric acidity he concludes that the phenomena of hypoglycæmia can be attributed to diencephalic mechanisms. All symptoms vary in intensity, and these undulations are not to be explained by biochemical changes in the blood.

### Observations on the Psychological Factors in Urination and Genito-Urinary Afflictions.

THE so-called functional disorders of the genito-urinary system have been studied in the light of psychoanalysis by Karl A. Menninger (*The Psychoanalytic Review*, January, 1941). There is, he claims, an erotic component in urination. It is one of the child's earliest expressions of sexual excitement. This association of urination with genital activity gives a clue to the polyuria of childhood and old age. There is a direct psychological connexion between bed-wetting, masturbation and nocturnal emissions. Psychoanalysis demonstrates that in the neurotic urinary symptoms frequently represent and replace sexual activity. Case histories are quoted to illustrate the erotic abuses of micturition. The author believes that urination is never entirely deerotized, but that in many cases the aggressive elements in the act may be more important than the erotic ones. Urination may be a method of expressing hostility. Words closely connected with urination and defæcation are numerous in the vocabulary of vituperation. The author cites cases from the literature on renal colic in which definite evidence of stones is lacking. He believes that nephrolithiasis is among the psychogenically determined diseases. It is commoner in women than in men. It is often associated with other

hysterical reactions. In women renal colic is associated with sexual frigidity and in men with *ejaculatio præcox*. Evidence is given suggesting a "urethral personality type" requiring further investigation.

### Results in "Metrazol" Shock Therapy.

REPORTING on the therapeutic effects of "Metrazol" H. O. Colomb and G. L. Wadsworth (*The Journal of Nervous and Mental Disease*, January, 1941) found a 50% increase in the recovery rate among schizophrenic persons treated by convulsion therapy contrasted with a standard control group. They claim that their observations show that certain patients derive more benefit than others; and that if no favourable response is noticed after five "Metrazol" treatments, the patients are unlikely to benefit by a great number of such treatments. No serious complications attended the treatment; but a few old tuberculous patients showed a reactivation of tuberculosis after "Metrazol" treatment. "Metrazol" speeds up the recovery in favourable cases. The authors claim that the best results are likely to follow in cases in which the pre-psychotic personality is normal, in which the individual has shown previously good social and economic adjustment, and in which, in the attack, there have been prominent situational factors. They favour cases in which there has been an acute onset and in which the duration of the psychosis is less than a year prior to treatment. Schizophrenic patients showing affective features, especially depression, and those in whose condition there is an element of mental confusion, should give a good response to treatment.

### Reaction of Schizophrenics to Physical Illness.

R. E. HEMPHILL (*The Journal of Mental Science*, September, 1940) has studied schizophrenic cases in which a physical illness was followed by specific psychotic reactions and thus modified the clinical picture. He presents three cases in detail. They were of the paranoid type; and an impressive psychotic reaction followed the physical disturbance. The chief psychotic feature was the incorporation of objects of the outer world by a break in the body surface. A psychological interpretation of the symptoms suggests that the reaction is related to loss of stability of the boundaries of the ego. It is further suggested that similar mechanisms are involved in the delusion of noxious substances having passed through one of the natural body openings.

### Mass Psychotherapy.

THE answer to the overcrowded out-patient psychiatric clinic is given by E. N. Snowden (*The Lancet*, December 21, 1940) in a discussion on mass psychotherapy. An alternative to individual psychoanalysis, which is impossible in an out-patient department, is the method of explanation and reeducation. The efficacy of these simple methods depends on the facts that in many cases of anxiety the cause of the condition is well known to the patient or can be discovered by simple questioning and that he has not associated the symptoms with the cause. Anxiety symptoms may differ, but the underlying cause and the

manner in which the anxiety is produced are essentially the same. It is therefore possible to collect the patients of a certain type together and to give them the necessary explanation as a class. This is followed later by short individual interviews. A preliminary interview with each patient is necessary to arrive at a diagnosis and to ascertain his suitability for mass treatment. This first interview is designed to explore the five successive phases of life: childhood, school life, adolescence, working life and married life or its equivalent. In mass treatment the patients realize that psychological illness is a natural process and that if the symptoms can take various forms the basic causes are in most cases similar. The method implants confidence and widens understanding. Mass psychotherapy has been given extended trial at the Hospital for Nervous Diseases at Malda Vale, and the results have surpassed all expectations.

### Spine Injuries following Convulsions.

IRVIN SCHATZ AND B. E. KONWALER (*The Journal of Nervous and Mental Disease*, February, 1941) set out to compare the spinal injuries said to be brought about by artificial convulsions following treatment by "Metrazol" and those induced by so-called idiopathic epilepsy. Sixty-six psychotic patients treated by "Metrazol" and ten epileptic patients were studied radiologically. It was found that 28.8% of the patients treated by "Metrazol" had unquestionable fractures; these were limited to the mid-thoracic region and were usually apparent in the early stages of treatment. Of the patients suffering from idiopathic epilepsy, 50% showed evidence of injury to the spine, the cervical vertebrae being most commonly involved. Although most of the psychotic patients had been ill for more than two years, they showed no evidence of malnutrition or avitaminosis. It is suggested that during the "Metrazol" fit the anterior portions of the vertebral bodies are compressed. No objective neurological signs were observed in those patients presenting fractured vertebrae. Pain in the back was a constant complaint. There was no correlation between the extent of the vertebral compression and the back-ache. Methods of prevention are discussed, such as the use of spinal anaesthetics, plaster of Paris torso casts and straps. The writers believe that firm pressure on the shoulders and knees will minimize the risk of vertebral fracture.

### Naso-Pharyngeal Tumours and their Neurological Complications.

THE naso-pharynx is a fertile tissue bed for neoplastic growth, according to Leonard A. Titrud and William T. Peyton (*The Journal of Nervous and Mental Disease*, December, 1940), who base their findings on a review of 195 patients. They claim that the transitional cell carcinoma and the lympho-epithelioma are not definitely accepted as distinct entities and have a common histopathological appearance and a similar symptom-complex. They claim that naso-pharyngeal malignant disease causes nasal or oral discharge, naso-pharyngeal obstruction, cervical lymphadenopathy and cranial nerve involvement. Neurological symptoms were demonstrable in 63% of the squamous carcinomata and 73% of the lymphadenomata. There tumours are extremely malignant, but they sometimes respond to irradiation.

## British Medical Association News.

### MEETING OF THE FEDERAL COUNCIL.

A MEETING of the Federal Council of the British Medical Association in Australia was held at the Medical Society Hall, Albert Street, Melbourne, on March 3 and 4, 1941, SIR HENRY NEWLAND, the President, in the chair.

#### Representatives.

The following representatives of the Branches were present:

*New South Wales:* Dr. George Bell, O.B.E., and Dr. W. F. Simmons.  
*Queensland:* Dr. D. G. Croll, C.B.E., and Dr. T. A. Price.  
*South Australia:* Sir Henry Newland, C.B.E., D.S.O., and Dr. A. F. Stokes.  
*Tasmania:* Dr. S. Gibson, M.C., and Dr. C. Craig.  
*Victoria:* Dr. F. L. Davies and Dr. H. C. Colville.  
*Western Australia:* Dr. N. M. Cuthbert and Dr. M. K. Moss (in place of Dr. F. W. Carter).

#### Minutes.

The minutes of the previous meeting of the Federal Council of September 3 and 4, 1940, which had been circulated among members, were taken as read and signed as correct.

#### Appointment of Office Bearers.

Only one nomination for the office of President had been received, that of Sir Henry Newland, and he was therefore declared elected. Sir Henry Newland thanked the members for his reelection.

Only one nomination for the office of Vice-President had been received, that of Dr. George Bell. Dr. Bell was declared elected. Dr. Bell was also reelected as Honorary Treasurer of the Federal Council.

#### Appointment of General Secretary.

At the meeting of the Federal Council in September, 1939, Dr. J. G. Hunter was reappointed General Secretary for a period of two years as from October 1, 1939. It was pointed out that normally the appointment of a general secretary would be made at the meeting of the Federal Council in September, 1941. However, as a result of the war, circumstances might arise which would preclude the holding of a meeting or make it undesirable to meet in September. The appointment was therefore considered at the present meeting, and it was resolved that Dr. J. G. Hunter should be appointed General Secretary for a period of two years as from October 1, 1941.

#### Finance.

Dr. George Bell presented the financial statement as at December 31, 1940. He explained that the statement was for a period of six months only, as the financial year of the Council closed at the end of June. The statement, which included the Federal Council account of the Australasian Medical Congress (British Medical Association) Fund Account, was received. The Federal National Health Insurance Emergency Account was also presented. It was also pointed out that interest on debentures held by the Federal Council in the British Medical Association House, Sydney, had been paid to the congress fund.

Dr. George Bell submitted a statement setting out the probable income and expenditure of the coming year. He drew attention to the fact that accumulated funds no longer existed, and that there was in fact a debit balance. On the motion of Dr. Bell, seconded by Dr. W. F. Simmons, it was resolved that the contribution of each Branch for the current year should be at the rate of six shillings per member. The General Secretary pointed out that it was desirable that a date should be fixed so that there would be uniformity in the several Branches when a decision was made in regard to the number of members in respect of whom a *per capita* payment was due. It was resolved, on the motion of Dr. F. L. Davies, seconded by Dr. George Bell, that the date be the first of January in each year.

#### Court Appointments and New Year Honours.

The President reported that he had forwarded a letter of congratulation to each of the members who had been honoured by His Majesty the King: Surgeon-Captain W. J. Carr, Colonel D. M. McWhae and Group-Captain E. H. Daley, who had been appointed honorary physicians to the

King; Surgeon-Captain F. Darby, Colonel W. W. Walsh, Air-Commodore T. E. V. Hurley, who had been appointed honorary surgeons to the King; and to Sir Champion de Crespigny, Dr. B. T. Zwar, Dr. C. H. Goddard, Dr. C. C. Fenton and Dr. A. A. Palmer, who had been included in the New Year Honours List.

#### Centenary of "The British Medical Journal".

The General Secretary reported that a cable of congratulation had been forwarded by the President to *The British Medical Journal* on the occasion of its centenary.

#### Transfer of Membership.

Correspondence was read from the South Australian Branch on the question of the transfer of membership and the non-payment of subscriptions. A letter from the General Secretary was read, in which it was pointed out that when a member's subscription for the current year had not been paid by December 31, his membership automatically ceased. If the amount owing was not paid by March 31 the member's name would have to come up for reelection. It was pointed out that these conditions were laid down by the rules of the Association. In view of the fact that some Australian Branches were inclined to be lenient to their members in this regard, it was resolved that the information should be sent to the several Branch councils.

#### Appearance of Proceedings of the Federal Council in the Lay Press.

A communication was received from the Queensland Branch, pointing out that extracts from the report of the meeting of the Federal Council in *THE MEDICAL JOURNAL OF AUSTRALIA* had been published in the lay Press. Some embarrassment had been caused to members of the Council. It was pointed out that when a member proposed a motion on behalf of his Branch it might be supposed that he was acting on his own account. In the discussion one member stated that members of the Council would be diffident about proposing motions, particularly when such motions referred to military matters, if their names were to be published in the Press. Another member said that it would not be sufficient to omit names, but that in his opinion certain matters should not be mentioned. On the other hand, yet another member insisted that the members of the Branches were entitled to know what part their representatives to the Federal Council took in its deliberations. The General Secretary pointed out that reports for *THE MEDICAL JOURNAL OF AUSTRALIA* were always seen and approved by him before publication. Any matter that should not be made public for various reasons was always omitted. It was resolved that the Council would indicate what matters ought to be withheld from publication.

#### Private Clinical Laboratories.

The General Secretary reported that some correspondence had been received from the Victorian Branch of the Australian Chemical Institute and from the Section of Pathology and Bacteriology of the New South Wales Branch, on the subject of the employment of unqualified persons. It was pointed out that the matter affected the Postmaster-General's Department in regard to the transmission of specimens through the post. The New South Wales section had suggested that all clinical laboratories should be registered, that medical laboratories should be actively controlled by qualified medical persons and that veterinary laboratories should be actively controlled by qualified veterinarians. It was decided that the matter should be referred to the Branches.

#### Medical Officers' Relief Fund (Federal).

Dr. George Bell presented, on behalf of the trustees of the Medical Officers' Relief Fund (Federal) an interim report for the half-year ended December 31, 1940. He pointed out that the assets of the fund amounted to more than £10,000. The report was received and adopted.

#### Returned Medical Officers' Relief Fund.

At the meeting of the Federal Council held in September, 1940, it was decided to defer consideration of the establishment of a Returned Medical Officers' Relief Fund. Dr. W. F. Simmons said that in view of the fact that many members were contributing to schemes for the protection of practices, the present time was not opportune for the inauguration of a Returned Medical Officers' Relief Fund. In any case, he said that it was the same few generously minded persons who always subscribed to funds of this kind. Dr. George Bell said that in matters requiring financial

sacrifice some districts had done badly and the members had not pulled their weight. Dr. F. L. Davies was in agreement with the views expressed by Dr. Simmons, particularly in regard to the fact that the names of the same persons always appeared in response to every appeal. Dr. A. F. Stokes, speaking from the point of view of the South Australian Branch, said that members were facing many appeals and that the time was inopportune for the establishment of a new fund. Dr. T. A. Price thought that contributions to a Returned Medical Officers' Relief Fund should be compulsory, an amount being added to the subscription payable by each Branch member. On the motion of Dr. W. F. Simmons, seconded by Dr. A. F. Stokes, it was decided that consideration of the matter should be deferred.

#### Contract Practice Subcommittee.

At the meeting of the Federal Council in September, 1940, the appointment of the Contract Practice Committee was extended to the present meeting. It was thought that an occasion might arise on which the committee would be called upon to act. The committee was therefore reappointed.

#### Physical Fitness.

At the meeting of the Federal Council in September, 1940, a letter was received from the Queensland Branch forwarding a request from some of its members that the National Health and Medical Research Council should be asked to invite an expert in physical education in America to visit Australia. It was resolved at that meeting that Dr. F. L. Davies and Dr. H. C. Colville should obtain an opinion from the Director of Physical Education at the University of Melbourne as to whether a useful purpose would be served by the adoption of the Queensland Branch's recommendation. The Secretary also read some correspondence with the Director of Physical Education of New South Wales. Dr. F. L. Davies said that he had not been able to make contact with Professor F. Duras prior to the meeting of the National Health and Medical Research Council. However, when Professor Duras was seen later on he had expressed the view that there was no particular need for a lecturer to be obtained from outside Australia. It was resolved, on the motion of Dr. George Bell, seconded by Dr. W. F. Simmons, that no further action should be taken for the present and that a copy of Dr. Davies's statement should be forwarded to the Queensland Branch.

#### National Health and Medical Research Council.

The report of the ninth session of the National Health and Medical Research Council, held at Canberra on November 6 and 7, 1940, was received.

A letter had been received from Dr. J. Newman Morris, the Council's representative on the National Health and Medical Research Council, on the subject of health administration, physical fitness and reconstruction after the war. It was desired that the views of the Federal Council should be obtained in regard to what steps should be taken to ensure more effective health administration both now and after the war. The General Secretary reported that interim reports had been received from the Victorian and New South Wales Branches, and it was resolved that the Branches be asked to submit their views to the General Secretary as soon as possible.

#### Australasian Medical Publishing Company, Limited.

The General Secretary reported that he had received a copy of the annual financial statement of the Australasian Medical Publishing Company, Limited, and that a copy had also been forwarded to each Branch.

At the last meeting of the Federal Council of September, 1940, discussion took place in regard to the Australasian Medical Publishing Company, Limited, and the supply of THE MEDICAL JOURNAL OF AUSTRALIA to members. As a result of this discussion it was recommended to the Branches that the Federal Council should make a legal agreement with the Australasian Medical Publishing Company, Limited, so that each member should receive THE MEDICAL JOURNAL OF AUSTRALIA. The General Secretary reported that this decision had been communicated to the Branches. The Queensland Branch stated that it thought that an agreement was necessary. The South Australian and the New South Wales Branches were both in favour of an agreement. Speaking for the Victorian Branch, Dr. H. C. Colville said that the Branch would approve of the Federal Council agreement, provided that the terms were submitted to the Branches before the agreement was finally approved. The Western Australian and Tasmanian members intimated that their Branches were in favour of the proposed agreement. On the motion of Dr. H. C. Colville, seconded by Dr. George

Bell, it was resolved that the Australasian Medical Publishing Company, Limited, should be asked whether it was willing to enter into an agreement with the Federal Council for the supply of THE MEDICAL JOURNAL OF AUSTRALIA.

The General Secretary said that if an agreement was to be drawn up, it would be necessary for the Federal Council to give some indication as to its views and intentions. For example, did the Council intend that every member should receive the journal? Dr. Price said that it was necessary for every member to have the journal. Dr. Colville said that many men who went on active service said that they did not want it. The question was whether its receipt was compulsory; the Victorian Branch held that it was not. The Branch therefore wanted an agreement. Sir Henry Newland said that at the time the journal was established no agreement was necessary; the Branches could not own the journal, since they were not all incorporated bodies; the Federal Committee was not an incorporated body, and therefore the Australasian Medical Publishing Company, Limited, had been formed. Dr. Colville said that the drawing up of an agreement was the correct thing to do and the only thing to do.

On the motion of Dr. George Bell, seconded by Dr. A. F. Stokes, it was resolved that the agreement should provide that every member of the Association in Australia should be supplied with THE MEDICAL JOURNAL OF AUSTRALIA.

It was also resolved, on the motion of Dr. H. C. Colville, seconded by Dr. N. M. Cuthbert, that THE MEDICAL JOURNAL OF AUSTRALIA should be designated as the official organ of the British Medical Association in Australia.

Dr. George Bell and Dr. W. F. Simmons were appointed a committee to deal with the Australasian Medical Publishing Company, Limited, in the drawing up of an agreement.

#### Alien Medical Practitioners.

Reference was made to the expulsion of enemy alien members. It was pointed out that under the provisions of the National Security Act, National Security (Supplementary) Regulations 5, it was possible for an association such as the British Medical Association to suspend or cancel the membership of a member who was or had been the subject of a country with which war was being waged, and there was no relief from this cancellation. The question of expulsion of members had been raised by the Queensland Branch, and the General Secretary reported that he had written to the Secretary of the Parent Body, who had replied that the Association had no power to expel alien members. It was pointed out that the Queensland Branch thought that the regulations conferred powers of expulsion. If a member was suspended for the duration of the war, he was returned to membership automatically at the end of the war. In this regard, certain Branch members pointed out that suspension simply relieved alien members of their obligation to pay subscriptions. The Queensland Branch was particularly anxious to know what other Branches were doing, especially in regard to internees, for internees would wish their membership to be retained. After discussion it was resolved that the matter should be left to the discretion of each Branch.

The General Secretary also reported that he had received a letter from the Secretary of the Parent Body in regard to the revocation of the reciprocal agreement regarding registration between the United Kingdom and Italy.

#### Friendly Society Contract Practice.

At the previous meeting of the Federal Council in September, 1940, reference was made to certain resolutions that had been adopted in June, 1940, at a conference between the Contract Practice Committee of the Federal Council and the Consultative Committee of the Friendly Societies of Australia. The outcome of this conference was that no further steps should be taken in regard to the proposed model common form of agreement until some adjustments had been made in the Victorian lodge capitation rate. Dr. Colville said that the position had become somewhat involved, by reason of the fact that the Victorian Branch had been advised by the friendly societies that there was no possibility of their accepting the new Federal common form of agreement, but that consideration would be given to an increase in the rate if it were applied to the existing agreement, the Wasley award. Dr. Colville wished to know, therefore, whether the Council would accept the proposal of the Victorian friendly societies. It was pointed out that the delay was hindering progress in some of the other States. After further discussion it was resolved, on the motion of Dr. George Bell, seconded by Dr. W. F. Simmons, that the Victorian Branch should be advised to accept the proposal and that such acceptance should be without prejudice to consideration at a later date of its application to the model common form of agreement.



#### Schedule of Minor Operations.

Consideration was given to a schedule of minor operations to be adopted in the model common form of agreement. The schedule had been drawn up by the New South Wales Branch and included the following procedures when undertaken without local or general anaesthesia, freezing not being regarded as a form of anaesthesia: the opening of boils and abscesses, the insertion of sutures two in number, the dressing of first-degree burns, the removal of splinters, the removal of a foreign body from the eye, the removal of a foreign body from the ear, the removal of a foreign body from the nose, the removal of a fish bone from the throat, the relief of tongue tie, the replacement of a retroverted uterus, the insertion of a pessary and the giving of a hypodermic injection in an emergency. The schedule was adopted.

#### War Emergency Organization.

##### Repatriation Commission.

The Council had before it a request from the Repatriation Commission that a medical service should be instituted for the benefit of widows, orphans and widowed mothers of men serving with the defence forces in the present war. There was a tentative arrangement that the existing scheme for dependants of the 1914-1918 war should be extended for a period of three months under the same conditions, to include similar classes of dependants of sailors, soldiers and airmen in connexion with the present war.

Dr. H. C. Colville pointed out that the Council had to decide three questions: (a) whether the service should be given at all, (b) whether the service should be based on the model common form of agreement, (c) whether the capitation rate should be uniform in each State with a variation for the city and country. It was resolved, on the motion of Dr. Colville, seconded by Dr. George Bell, that the request of the Repatriation Commission for a medical service should be approved, and it was also decided, on the motion of Dr. A. F. Stokes, seconded by Dr. W. F. Simmons, that the agreement should be based on the common form of agreement adopted at the meeting of the Federal Council on September 3, 1940.

Consideration was then given to the rate of payment under the agreement. The General Secretary pointed out that the field of contract practice was being extended in every direction. He thought that this should be recognized. An endeavour had been made before the Royal Commission on National Health Insurance to establish the principle that if the field of contract practice was extended, the rate of payment had to go up. Slight should not be lost of the fact that the lodge rate was a concessional rate of 2s. 3d. a service. In private practice the average fee was 8s. a service. The Council had to decide whether the medical profession in these circumstances should agree to give the proposed service at a concessional rate or whether it was desired to secure a fair return for work done.

Dr. D. G. Croll pointed out that when the medical profession was dealing with the dependants of deceased soldiers it was not a suitable time to think about an increase in rates.

Dr. F. L. Davies said that it was the Government that was trying to establish the service, and that the Government wanted the medical profession to give concessions, and Dr. W. F. Simmons added that sentiment should not all be on the side of the medical profession. Dr. C. Craig said that the medical profession would be making a considerable concession if it accepted these dependants for contract practice attendance without submitting them to a preliminary examination.

Dr. F. L. Davies pointed out that the proposed service did not include all dependants, but only those who asked to be allowed to join such a service, and therefore only those who constituted bad risks. He thought that, as far as the Australian Imperial Force and its dependants were concerned, a concessional rate would be satisfactory because the service would be required for a comparatively limited period. Work for the Repatriation Department of a similar kind, however, would be of much longer duration. Dr. Davies also pointed out that when the service to dependants was initiated after the last war, the agreement was intended to cover a similar number of persons already on a list, but that later on fresh names were added.

Dr. D. G. Croll said that it would be impossible to fix a rate if there were to be no selection of risks, and Dr. T. A. Price said that he would prefer payment to be made on a fee per service basis.

Dr. H. C. Colville thought that the capitation rate should be uniform throughout Australia, and that it should be 26s. for the town and 32s. for the country. He also thought that the agreement should be reviewed at intervals, possibly

every five years. He did not think that lodge conditions should be allowed to dominate the situation. If these views were accepted, it would be necessary to have the dependants on a separate list, and the Repatriation Department would probably object to the extra work entailed. Dr. Colville therefore moved that the capitation rate should be uniform throughout Australia, with the proviso that the country rate should be 25% higher than the metropolitan rate. In seconding Dr. Colville's motion, Dr. F. L. Davies expressed the opinion that all doctors should be allowed to treat their patients on such a service. The motion was carried.

At this stage Dr. F. L. Davies referred again to the examination of dependants prior to their acceptance on a list, and he expressed the view that the Repatriation Department would not accept an agreement which provided that dependants should be examined before becoming entitled to medical benefit. Dr. D. G. Croll thought that there should be an examination and that a special arrangement might be made for those who were rejected. It was resolved, however, on the motion of Dr. C. Craig, seconded by Dr. H. C. Colville, that the previous resolution, according to which the service was to be based on the common form of agreement, should be amended to provide that there should be no examination of persons entitled to medical benefits.

The Council then gave further consideration to the rate of payment. Dr. T. A. Price proposed and Dr. N. M. Cuthbert seconded a motion to the effect that the Repatriation Department should be approached with a view to the drawing up of an agreement to provide for payment being made on a fee per service basis. Dr. Colville strongly opposed this motion. He was convinced that if the motion was passed it would be rejected by the Repatriation Department and the matter would be postponed for a further twelve months. This he thought very undesirable, since the matter was one of urgency. The motion on being put to the meeting was lost.

Dr. H. C. Colville moved and Dr. F. L. Davies seconded the following motion:

That provided every beneficiary (that is, widows, orphans and widowed mothers) is placed on a medical officer's list, the rate be 26s. in the metropolitan area and 32s. in country areas.

Dr. W. F. Simmons thought that as there was to be no preliminary examination, the rate should be 30s. and 36s. He moved an amendment to this effect. Dr. A. F. Stokes seconded the amendment, which on being put to the meeting was lost. The motion of Dr. Colville and Dr. Davies was adopted.

Discussion then took place as to what action should be taken if the Repatriation Department refused to place every beneficiary on a medical officer's list. After discussion it was resolved on the motion of Dr. W. F. Simmons, seconded by Dr. S. Gibson, that in these circumstances the rate should be 32s. in metropolitan areas and 40s. in country areas.

It was further resolved that the agreement should be subject to review every three years and that Dr. F. L. Davies and Dr. H. C. Colville should be authorized to discuss the matter of an agreement with the Repatriation Department. In conclusion the Federal Council resolved, on the motion of Dr. A. F. Stokes, seconded by Dr. W. F. Simmons, to record the fact that the rate of payment asked for by the Council was a concessional rate.

#### Conditions of Service Committee.

It was resolved that Dr. F. L. Davies and Dr. H. C. Colville should be reappointed members of the Conditions of Service Committee and that they should have powers of cooption.

#### Medical Services to "Evacuees" from Hong-Kong.

Further consideration was given to the medical treatment of "evacuees" from Hong-Kong, a subject that was considered at the meeting of the Federal Council in September, 1940. Dr. F. L. Davies, on behalf of the Conditions of Service Committee, reported that he had been informed by Colonel W. Evans that following an interview with him (Dr. Davies), a cable had been sent to the War Office, London, suggesting that a contract system should be arranged for dependants of the armed forces amongst the "evacuees". At a subsequent interview that Colonel Evans had with representatives of the Department of the Interior it was realized that a yearly arrangement would be impracticable, as the "evacuees" had no fixed address; it was therefore decided to hand over the care of the service for civilian "evacuees" to the Department of the Interior. In the meantime, however, the War Office had replied, accepting the original proposal. The War Office had since been advised of the later proposal, but no reply had been received. The General Secretary also reported that he had sent a copy of

a memorandum of an interview with Mr. B. E. Maughan, Finance Liaison Officer of the Hong-Kong Government, in regard to the treatment of civilian "evacuees". The memorandum is as follows:

At the outset Mr. Maughan stated that he was responsible only for the civilian evacuees and not for those who were dependants of members of the armed forces.

He went on to say that the civilian evacuees might be divided into two (2) main groups:

- (i) the dependants of members of the Public Services in Hong-Kong, and
- (ii) the dependants of other persons employed, or otherwise, in Hong-Kong.

With regard to the first group, Mr. Maughan stated that medical care was provided free of charge, such care being in fact part of the terms of employment. Hospital care, however, in so far as maintenance is concerned, was not free and the individual concerned was expected to pay in accordance with a scale based on the amount of salary he received.

With regard to the other group, Mr. Maughan stated that in some instances free medical care was provided by the firm with whom the breadwinner was employed. The rest of this group had to provide medical care at their own expense.

In regard to the position in Australia he stated that arrangements had just recently been made as follows:

Firstly, in regard to the dependants of public servants payment of accounts for medical care would be authorized by him and the method of payment was as follows: He would notify the Commonwealth Treasury of the accounts and the Commonwealth Sub-Treasury in each State would be authorized to pay the accounts.

With regard to the second group, if the person concerned was unable to meet the account he again would authorize payment of such an account. This account would then be referred to the Hong-Kong Government, who would then deal with the husband or person responsible for the dependant as to whether he was able or not to meet it. If not, then the Government would be responsible. But this position, of course, in no way affects the authority given by Mr. Maughan for the payment of the account. In this regard Mr. Maughan asked if the profession would keep in mind the circumstances in which this latter group particularly is placed. The husband or other person responsible has not only to maintain a home in Hong-Kong, but also in Australia.

Mr. Maughan stated that the evacuees did not want charity, but he was particularly anxious that the profession should appreciate the circumstances in which these individuals are placed when it came to the question of submitting an account. He said that of course some of them would not be able to pay for medical care themselves even in Hong-Kong and would have to go to the out-patients' department.

Finally, Mr. Maughan said that he was particularly grateful for the consideration which had been given to the evacuees in Australia.

#### *An Appeal for Financial Aid to Distressed Medical Colleagues in Great Britain.*

Consideration was given to a suggestion that a fund should be started for the relief of distressed colleagues in Great Britain. The representatives from several States reported that their Branch councils were in favour of the establishment of such a fund. Dr. A. F. Stokes said that 60 members of the South Australian Branch had already promised the sum of £300. It was resolved, on the motion of Dr. George Bell, seconded by Dr. A. F. Stokes, that the Council should make an appeal to the medical profession in Australia to contribute to a fund which was to be known as the Medical War Relief Fund, for the relief of distressed colleagues in Great Britain. It was also decided that contributions to the fund should be forwarded to the Secretary of each Branch, who would then forward them to the General Secretary of the Federal Council for transmission to the Parent Body. A list of members making contributions to the fund will be published from time to time in THE MEDICAL JOURNAL OF AUSTRALIA, and the appeal will be terminated at the end of three months.

#### *The Fees of Locum Tenentes.*

The Federal Council considered a suggestion by the Queensland Branch that the fees of *locum tenentes* should be stabilized at a maximum fee of twelve guineas per week. The General Secretary reported that he had had correspondence on the subject with the several Branches. The

Victorian Branch had decided that it could not support the proposal. The South Australian Branch thought that the fee should remain at the pre-war level of ten guineas. The Western Australian Branch thought that the matter was not one in which the British Medical Association could take action. The Tasmanian Branch thought that a maximum fee should be fixed. The New South Wales Branch replied that the Federal Council had no power except to indicate what in its opinion should be the minimum rate. The General Secretary went on to explain that the matter was of some importance, but that the Federal Council had no power in the matter. The fixing of fees of this kind could be effected only under the National Security Regulations. It was resolved, on the motion of Dr. George Bell, seconded by Dr. A. F. Stokes:

That the Council is of the opinion that the fees payable to locum tenentes during the war period should not exceed those prevailing in peace-time.

#### *Sales Tax on Medical Books.*

The General Secretary read some correspondence that had passed between Butterworth and Company (Australia), Limited, and himself on the subject of the imposition of sales tax on medical books. It was proposed to write to the Commonwealth authorities pointing out that the tax was one on the acquisition of knowledge, but in the meantime the tax had been withdrawn. The correspondence was received.

#### *The War Risk of Ships' Surgeons.*

The Federal Council had before it a request from Dr. Ferguson Lemon for representation on arbitration proceedings in regard to war risks in the maritime services. The General Secretary reported that an award had been made by the Commonwealth Court of Conciliation and Arbitration providing for special war allowances to officers and other ratings and that he had been advised by the secretary of the Australasian Steamship Owners' Federation that the special allowance would be paid to ships' surgeons.

#### *The Provision of a Medical Library for Australian Army Medical Corps Officers in London.*

Further reference was made to the suggestion that a medical library should be created in London for the use of officers of the Australian Army Medical Corps. It was noted that the British Medical Insurance Company (Victoria) had offered to subscribe the sum of £10 towards this object if the amount was made up by other persons to £25.

#### *Medical Appointments Made without Reference to State Coordination Committee.*

The General Secretary reported that he had received a letter from the Western Australian Branch regarding the making of medical appointments in the Australian Imperial Force without reference to State coordination committees. The Branch cited the instance of a member whose name was reported to be under consideration for a certain appointment. The State Coordination Committee had recommended the appointment, particularly in view of his high military qualifications. It was stated that owing to political exigencies the appointment had not been made. The Western Australian Branch thought that the powers of the State Coordination Committee should be defined, and that nobody should be allowed to interfere with its decision. The General Secretary had referred the matter to the Conditions of Service Committee of the Federal Council, and Dr. F. L. Davies reported on behalf of this committee that he had been informed that the name of the member in question had not even been considered for the appointment under discussion. The General Secretary pointed out that the coordination committees had no powers whatever, but acted merely in an advisory capacity. The correspondence was received and the report of the Conditions of Service Committee was noted.

#### *The Military Rank of Anaesthetists.*

A letter was read from the Victorian Branch regarding the military rank of anaesthetists. It was held that they should hold a rank commensurate with the special work undertaken by them, that of major. Dr. F. L. Davies reported on behalf of the Conditions of Service Committee that he had interviewed the Director-General of Medical Services, Major-General R. M. Downes, who informed him that although the number of majors on the establishment of a general hospital had been increased in order to give a specialist the rank of major, there was a limit to the number of majors that could be appointed. The report of the committee was noted.

#### *The Abolition of Locum Tenens Allowance to Members of the Militia.*

At the last meeting of the Federal Council reference was made to the fact that *locum tenens* allowance was no longer being paid to medical practitioners serving with the militia. At that time no reply had been received to a letter that had been written on the subject to the Prime Minister. The General Secretary reported that the President had received a reply in November, 1940, stating that it had been decided not to grant the allowance, the chief reason being that everything must be done to avoid making it appear that any section or profession is receiving preferential treatment. The Prime Minister went on to say that with a view to assisting medical men, to save them as much inconvenience and financial embarrassment as possible, authority was given to the various commands to make the best arrangements possible for the carrying out of medical duties at camps by frequent reliefs of the officers in question, and also by the employment of the minimum number needed for essential requirements and training purposes.

#### *Treatment in Public Hospitals of Members of the Commonwealth Defence Forces.*

At the last meeting of the Federal Council it was decided to bring before the Director-General of Medical Services the position of honorary medical officers of public hospitals who were called upon to treat members of the militia admitted to these institutions. There was no suggestion that medical officers should receive private fees for the treatment of these soldiers, but it was thought that some recognition should be made, even if it was on the basis of a temporary commission in the Commonwealth Military Forces. Dr. F. L. Davies, on behalf of the Conditions of Service Committee, reported that he had interviewed the Director-General, who had informed him that he was in accord with the Council's view and that the matter had been reported to the Finance Department.

#### *Contract Attendance on Members of the Permanent Military Forces and their Families.*

The General Secretary reported that a proposal had been made by headquarters of the Southern Command regarding the contract attendance of medical practitioners on members of the Permanent Military Forces and their families. It was held that those arrangements should be made applicable to all States and that the rate should be 26s. *per annum* for the city and 32s. for the country. It was pointed out in discussion that in such an arrangement for contract practice highly placed officers would be included, and it was resolved that a request be made to the military authorities that the provisions of the regulation dealing with this matter should apply only to members of the forces whose income did not exceed £312 *per annum*.

#### *The Hours of Work for Air Force Trainees.*

At the last meeting of the Federal Council reference was made to a broadcast in which it was stated that Air Force trainees were working sixteen hours a day and enjoyed it. The Council on that occasion resolved to ask Air-Commodore Hurley for a ruling on the hours of work of trainees. The General Secretary said that a reply had been received from Air-Commodore Hurley, to the effect that the position was not as stated in the broadcast. He also said that he appreciated the views of the Federal Council and the interest its members had taken in the matter. The maximum hours worked by trainees were 55 to 60 a week. It was pointed out in discussion that this matter raised the whole question of industry and fatigue. After discussion it was resolved that the matter should be brought to the notice of the Prime Minister.

#### *Examination of Medical Practitioners Offering their Services to the Military Authorities.*

At a previous meeting of the Federal Council it had been recommended that medical men who wished to offer their services to the military authorities should be given an opportunity of being examined at once by a medical board, to determine their fitness or otherwise. If they were passed as fit, it was thought that they should be informed of the fact without delay and should also be told when their services were likely to be required. At that meeting it was resolved that the matter should be brought to the notice of the Director-General of Medical Services. The General Secretary reported that he had received a reply from Major-General Downes, stating that the recommendation of the Council would be followed as far as was practicable, and asking for instances since July, 1940, in which this had not been done. The General Secretary reported

that a letter had been written to the Director-General stating that the Council was glad to know that its recommendations were being carried out.

#### *Petrol Rationing.*

A letter was read from the Medical Secretary of the Victorian Branch with regard to the question of petrol rationing, and it was pointed out that some members had not reduced their consumption of petrol. In these circumstances all the members might possibly be called upon to suffer for the sins of a few. The General Secretary reported that he had had correspondence with the President on the subject and had written to each of the Branches. It was noted that the New South Wales Branch had undertaken on behalf of the authorities to control the rationing of petrol of its members.

#### *Medical Man Power.*

It was reported that the President had received a letter from the Prime Minister expressing his approval of the survey of medical man power that had been undertaken some time previously by the Branches at the suggestion of the Federal Council. It was also noted that a sub-committee of the Central Medical Coordination Committee had been appointed under the chairmanship of Sir Alan Newton to deal with the problem.

#### *Transfer of Children from Great Britain.*

Reference was made by the General Secretary to the offer of the Australian Branches to provide sanctuary for the children of medical men in Great Britain, and he said that only a few parents had availed themselves of the offer.

#### *Army Medical Service Administration.*

The Federal Council had before it a scheme which had been submitted by the New South Wales Branch, dealing with the supply and organization of medical personnel in Australia in the war emergency. The General Secretary reported that the scheme had been submitted to the several Branches. The Tasmanian Branch stated that the State Coordination Committee was unsatisfactory and that it would approve of the New South Wales scheme. The Victorian Branch replied that it could not approve of the New South Wales scheme, and the South Australian Branch saw no reason to depart from the present arrangements. The Western Australian Branch thought that the New South Wales scheme was unnecessary, and the Queensland Branch thought that the scheme would not be of much advantage unless a state of emergency was declared in the Commonwealth. The President reported that it had been decided to make adjustments in the present system of coordination committees, with the idea of expanding, accelerating and stimulating their powers and duties. A deputy chairman, who was a member of the practising profession, would be appointed in each State. The President said that he had discussed this matter with Professor W. K. Inglis, who had first brought it to the notice of the Federal Council, and that Professor Inglis appeared to be satisfied with the proposed changes.

#### *Subscription of Members on Active Service.*

A letter was read from the Secretary of the Australasian Medical Publishing Company, Limited, drawing attention to a circular that had been issued by Air-Commodore Hurley to "all medical officers". The circular purported to state the rates of subscription to the British Medical Association, and these rates were in fact those at present required by the Victorian Branch. The circular also made reference to the supply of THE MEDICAL JOURNAL OF AUSTRALIA. The Secretary of the Company pointed out that the circular was misleading, and asked that some steps should be taken to correct the false impression that had been created. It was resolved, after discussion, that Air-Commodore Hurley should be informed of the subscription payable to the different Branches by members who had enlisted in the Royal Australian Air Force.

#### *The Radiological Examination of Recruits for the Militia.*

A request was received from the Victorian Branch that a recommendation should be made to the Federal Government that X-ray examination of the chest should form part of the medical examination of all persons called up for compulsory training in Australia. The General Secretary reported that the Victorian Branch's request had been referred to the several Branches, and that approval had been received from the New South Wales, the Western Australian and the South Australian Branches. It was noted that correspondence had taken place between Dr.



Bell Ferguson, of Victoria, and the Prime Minister, who had replied that he would bring the matter to the notice of the Minister for the Army. It was resolved, on the motion of Dr. H. C. Colville, seconded by Dr. George Bell, that the request of the Victorian Branch should be approved.

#### *The Commencing of Specialist or General Practice during the War.*

A letter was received from the Queensland Branch asking that the Federal Council should give consideration to the granting of permission to members to start specialist or general practice during the war. It was pointed out that the provisions of the new *Medical Act* in Queensland regarding specialist practice had not yet been brought into force. It was considered by the Queensland Branch Council that applications to start in a specialty in the city should be considered where a member has, by his action previous to the outbreak of war, indicated his intention of taking up that specialty. Obtaining a higher degree and/or the filling of a post in that specialty in a hospital should be considered as indicating that intention. In the case of medical men starting in general practice, the Council would be guided by the possible need in the particular area. Dr. H. C. Colville said that the procedure adopted in Victoria was similar to that of Queensland; each case was treated on its merits, and all applications were dealt with by a special committee. Dr. A. F. Stokes said that in South Australia every case was treated on its merits. It was resolved that the matter was one for each Branch to determine.

#### *Federal Income Tax of Australian Army Medical Corps Officers.*

The Council had before it a proposal from the Queensland Branch that the Commonwealth Government should be asked for some concession in Federal income tax on behalf of members of the Australian Army Medical Corps who were on full-time duty in Australia. Dr. D. G. Croll referred to the difficulty experienced by some members of the medical profession, who had joined up for home defence, and said that during the war of 1914-1918 persons on home duty were exempted from taxation. It was also pointed out that when tax was owing by a member of the forces, his pay was retained until the required amount had been paid and he was left with only the basic wage to meet his many obligations. It was reported that the New South Wales Branch did not approve of the suggestion. Dr. W. F. Simmons pointed out that what had been said about the hardships of medical officers applied equally to other members of the community. Dr. N. M. Cuthbert expressed the opinion that it might be possible to allow medical officers time in which to pay the tax. After further discussion it was resolved that the matter should be left in the hands of the President and the General Secretary to take action.

#### *Privileges of Australian Army Medical Corps Officers who are Ill.*

A proposal was received from the Queensland Branch that the Commonwealth Government should be approached in order to obtain the same privileges for all army medical officers who were ill. The Queensland Branch's communication pointed out that a distinction was made in the Militia between officers who had served in the last war and those who had not. After the correspondence had been read, Dr. D. G. Croll pointed out that there was no need to take action, because an army order had been recently issued rectifying the matter. The position at present is that any member of the Citizen Military Forces called up for continuous full-time duty will be granted sick leave in accordance with the conditions that apply to members of the Australian Imperial Force. In other words, his pay and allowances will continue until he is returned to duty or discharged.

#### *Medical and Pharmaceutical Service to Dependents of Members of the Armed Forces.*

The Federal Council considered a proposal made by the Victorian A.I.F. Women's Association, by the Victorian Division of the Red Cross Society and by the Returned Sailors and Soldiers' Imperial League, that a medical service should be established for the dependants of men serving with the forces. Dr. F. L. Davies said that in the opinion of the Victorian Branch it would be a suitable gesture on the part of the medical profession to men on active service if such an arrangement were made. The only difficulty, in his opinion, was that the profession would be accused of self-interest if the Association were to approach the authorities. After discussion it was resolved, on the motion

of Dr. George Bell, seconded by Dr. M. K. Moss, that in the opinion of the Council the institution of such a service was desirable. It was also resolved, on the motion of Dr. N. M. Cuthbert, seconded by Dr. S. Gibson, that the Returned Sailors and Soldiers' Imperial League, the Red Cross Society and the Victorian A.I.F. Women's Association should be advised that the Federal Council would be willing to provide a medical service on the basis of the Federal common form of agreement. After further discussion it was also resolved that the three bodies should be informed of the social service scheme in operation in New South Wales.

At this stage of the meeting the Federal Council returned to consideration of the model common form of agreement for friendly society contract practice that had been mentioned earlier in the meeting. The General Secretary reported that so far no satisfactory arrangement had been made with the Victorian friendly societies, and it was resolved, on the motion of Dr. F. L. Davies, seconded by Dr. N. M. Cuthbert, that no reduction should be made in the rate.

#### **Matters Deferred.**

Owing to the war the Council deferred consideration of the proposed Federal Emergency (Compensation) Fund, the public medical services, the principles of medical ethics and the organization of the profession.

#### **A Policy for a General Medical Service.**

At the previous meeting of the Federal Council consideration was given to a report of a general medical service for Australia that had been drawn up by a subcommittee consisting of Dr. George Bell, Dr. W. F. Simmons and the General Secretary. At that meeting consideration was deferred until the Branches had had an opportunity of expressing their views on the document. Dr. T. A. Price said that the Queensland Branch wanted to see the completed document published before the end of the war, for things would then change and medical practice would never return to its pre-war conditions. The final draft should be made public so that the members of the community, particularly members of friendly societies and of trade unions, who were to be the most affected, should realize what the aims of the medical profession really were. He pointed out that the Queensland Branch, after careful consideration, had given its general approval to the scheme. The scheme was not, however, ready for submission to the public, and he thought that it should be reconsidered by the same committee along with a co-opted representative from each Branch, so that it might be brought up for final consideration at the next meeting of the Federal Council. He was of the opinion that the rate of payment should be on a non-concessional or on a unit basis. Dr. N. M. Cuthbert said that the Western Australian Branch gave its general approval to the scheme, but considered that it should not be introduced during the war. The Western Australian Branch thought that the capitation fee should be on a family basis, so that a man would not be penalized on account of the size of his family, that the income limit should go to £550 *per annum*, and that workers' compensation benefits should be included. Dr. C. Craig said that he thought the scheme should be so drafted that it would include the large body of persons who were known as intermediate patients. With this Dr. W. F. Simmons agreed. A motion by Dr. T. A. Price, seconded by Dr. D. G. Croll, that the report should be referred as a matter of urgency to the Contract Practice Committee, was put to the meeting and lost. After further discussion it was eventually resolved that the report should be referred back to the Branches for further consideration, and that each Branch should be requested to indicate to the General Secretary as soon as possible in what respects it considered that the report should be amended, so that the committee might incorporate suggestions in a final draft for submission to the Council at its next meeting.

#### **National Health Insurance.**

##### *The Press Publicity Committee.*

On the motion of Dr. N. M. Cuthbert, seconded by Dr. D. G. Croll, Dr. George Bell and Dr. W. F. Simmons were appointed members of the Publicity Committee.

##### *National Health Insurance in New Zealand.*

The General Secretary reported that he had received a request from the Western Australian Branch asking for information regarding the New Zealand scheme of national health insurance. The General Secretary said that he had no recent information from New Zealand, and added that as far as he knew no amendments had been made to the *Social Security Act* (1938), Part 3. He drew the attention of members to an article in *The British Medical Journal*

of December 28, 1940, dealing with the question of general practitioner services under the *Social Security Act*. He added that he would write to the New Zealand Branch for further information.

#### Deaths of Members of the Association on Active Service.

The President referred to the loss which the medical profession had sustained in the deaths on active service of Lieutenant-Colonel A. J. Cunningham and Major E. J. Bailhache, and it was resolved that letters of condolence should be sent to the relatives.

#### Retirement of Dr. W. L. Crowther.

The President referred to the retirement from the Federal Council of Dr. W. L. Crowther, and to the valuable services that he had rendered during the past six years. It was resolved that the Council should place on record its appreciation of the services rendered to the Association by Dr. Crowther.

#### Votes of Thanks.

On the motion of Dr. N. M. Cuthbert, seconded by Dr. George Bell, the thanks of the Council were offered to Dr. F. L. Davies, Dr. H. C. Colville and Dr. C. H. Dickson, for their services as members of the Conditions of Service Committee.

The thanks of the meeting were extended to the Victorian Branch for its hospitality, and a vote of thanks was accorded to the President, Sir Henry Newland, for having presided at the meeting.

#### Date and Place of Next Meeting.

The determination of the date and place of the next meeting was left in the hands of the President.

## Naval, Military and Air Force.

#### APPOINTMENTS.

THE undermentioned appointments, changes *et cetera* have been promulgated in the *Commonwealth of Australia Gazette*, Number 63, of March 27, 1941.

#### AUSTRALIAN IMPERIAL FORCE.

##### Australian Army Medical Corps.

*To be Captains.*—Honorary Captains E. B. Docker and F. J. Cahill, 1st February, 1941, and J. C. R. Joyce, 1st March, 1941.

The undermentioned officers are transferred from "Voyage Only" duties: Captains J. P. Higgin with regimental seniority next after Captain J. Watson, D. D. L. F. Henry with regimental seniority next after Captain J. H. Samuels and W. R. Lane with regimental seniority next after Captain M. R. Robertson, 1st February, 1941.

#### Reinforcements.

*To be Captains.*—Captain (Temporary Major) W. A. Russell, 1st February, 1941, Captain R. F. A. Strang, 1st March, 1941, and Honorary Captain R. A. Isenstein, 1st February, 1941; Thomas Buchanan Campbell Patrick and Harold Bickford Hattam, 1st February, 1941; Honorary Captains M. M. Perl, S. E. Francis and D. R. Gauld, 1st March, 1941.

Captains L. J. Cains and H. L. Hughes are transferred from "Voyage Only" duties, 1st February, 1941.

#### AUSTRALIAN MILITARY FORCES.

##### Army Headquarters.

Major-General R. M. Downes, C.M.G., V.D., relinquishes, temporarily, the appointment of Director-General of Medical Services, and is appointed Inspector-General of Medical Services, with pay at the rate of £1,500 *per annum* (subject to variation in accordance with variations in the cost of living as though the rate of £1,500 *per annum* were prescribed in Military Financial Regulations), inclusive of all allowances except travelling, to date 26th March, 1941.

Colonel F. A. Maguire, C.M.G., D.S.O., V.D., is appointed Director-General of Medical Services, temporarily, with pay at the rate of £1,500 *per annum* (subject to variation in accordance with variations in the cost of living as though the rate of £1,500 *per annum* were prescribed in Military

Financial Regulations), inclusive of all allowances except travelling, and is granted the rank of Major-General (temporarily), to date 26th March, 1941.

(Ex. Min. No. 59—Approved 26th March, 1941.)

#### AUSTRALIAN ARMY MEDICAL CORPS.

##### Eastern Command.

##### Second Military District.

Honorary Captain E. B. Docker is appointed from the Reserve of Officers (A.A.M.C.) and to be Captain (provisionally), 31st January, 1941. Captain William Siegfried Dawson is appointed from the Reserve of Officers (A.A.M.C.), 30th November, 1940. (In lieu of the notification respecting this officer which appeared in Executive Minute No. 10/1940 promulgated in *Commonwealth Gazette* No. 16 of 1940.) *To be Captain (provisionally).*—Michael Harvey Colyer, 21st February, 1941, and Francis Charters Byrnes, 25th February, 1941.

##### Southern Command.

##### Third Military District.

Honorary Captain J. C. R. Joyce is appointed from the Reserve of Officers (A.A.M.C.) and to be Captain (provisionally), 28th February, 1941.

##### Fourth Military District.

Captain E. E. Broadbent is appointed from the Reserve of Officers (A.A.M.C.), 3rd September, 1940. Major (Temporary Lieutenant-Colonel) J. S. Reid relinquishes command of a Field Ambulance and the temporary rank of Lieutenant-Colonel and is transferred to the Retired List.

##### Western Command.

##### Fifth Military District.

*Reserve of Officers.*—*To be Honorary Major*—Frederick John Clark, 1st September, 1940.

#### ROYAL AUSTRALIAN AIR FORCE.

##### Citizen Air Force: Medical Branch.

Flight Lieutenant T. G. Millar is transferred from the Reserve to the Active List, with effect from 10th March, 1941.

The following is granted a commission on probation with the rank of Flight Lieutenant, with effect from the date indicated: Keith Franklin Drysdale Sweetman, M.B., B.S., 21st April, 1941.

##### Reserve: Medical Branch.

Flight Lieutenant H. C. Worch relinquishes his appointment, with effect from 20th November, 1940.—(Ex. Min. No. 46—Approved 26th March, 1941.)

## Correspondence.

#### MEDICAL WAR RELIEF FUND.

SIR: It can be safely assumed that every doctor in Australia worthy of his profession will be stirred to response by the appeal of the Federal Council (Melbourne, March 11) for the "Medical War Relief Fund" for the assistance of distressed colleagues in Great Britain. An important practical point appears, however, to have been neglected. An effort should be made to have contributions to this fund made allowable as deductions against income tax. If this concession can be obtained by the Federal Council of the British Medical Association and members notified of the decision, it will mean an appreciable increase in the amount which each of us is not merely willing but able to contribute.

Yours, etc.,

Southport,  
Queensland,  
March 29, 1941.  
C. R. R. HUXTABLE.

#### THE DIAGNOSIS OF EXTRAUTERINE PREGNANCY.

SIR: Your notes in "Current Comment" on the diagnosis of extrauterine pregnancy tempt me to send some remarks thereon.

1. Amenorrhœa. Although I agree that this could not be established as a sign, in 99% of cases, if the menstrual history is gone into very carefully, some slight variation from normal will be found; the onset of menstruation is

twenty-four hours late or early, and the period is not exactly true to type. I take it that this is what R. L. Dodds means when he speaks of menorrhagia, for the variation from type may be excessive loss; sometimes it is diminished loss; sometimes diminished or excessive duration without excessive loss. On the other hand, vaginal bleeding of any kind may be conspicuous by its absence. I am constantly impressing on my students that a period of amenorrhoea, however short, in a woman of the active child-bearing period, means pregnancy either inside or outside the uterus.

2. The pulse. This is a point which I have not seen emphasized, but almost universally one finds that the pulse of a patient with an unruptured ectopic gestation is 10 to 15 beats above normal. I have on many occasions made a diagnosis of a doubtful case on this point. The temperature, of course, is normal or subnormal, else the point has no significance; as a rule this is so.

3. Pain. Nearly every ectopic has one or two "warnings"; by this I mean that, on careful inquiry into the history, one can elicit a history of a transient attack of colicky pain, frequently accompanied by an equally transient faint feeling. Even the emergency acute abdomen full of blood will give a history of such an attack, perhaps a week previously, if it is sought for. Just as a *placenta previa* nearly always gives warning by a slight bleeding, so does the ectopic by a slight intraperitoneal leak.

4. Shoulder pain means blood in the subphrenic area and is pathognomonic. I had for years an intelligent sister in my ward, who on many occasions drew my attention to a case, which my house surgeon had missed, simply because of shoulder pain.

5. Salpingitis is almost always accompanied by a rise in temperature of greater or less extent and by tenderness in both lateral fornices. Admittedly a bleeding ectopic is bilaterally tender, but in this connexion I am speaking of the case still unruptured, and this case is tender only on the affected side.

Although a posterior colpotomy is a useful diagnostic resource, I agree with Howard Kelly, who said that, if you are doubtful enough to do a post-colpotomy, you may as well get your abdominal instruments ready.

Yours, etc.,

RUPERT E. MAGAREY.  
M.B., B.S., F.R.A.C.S., F.R.C.O.G.

Undated.

## Post-Graduate Work.

### LECTURES IN SYDNEY ON THE MEDICAL ASPECTS OF AIR RAIDS.

THE New South Wales Post-Graduate Committee in Medicine has arranged to hold the following lectures (admission to which will be free) at the Robert H. Todd Assembly Hall, British Medical Association House, 135, Macquarie Street, Sydney.

Tuesday, April 29.—"Modern Weapons", Major E. W. Sissan.

Thursday, May 1.—"War Wounds and their Treatment", Wing Commander H. R. G. Poate.

Tuesday, May 6.—"Organization of the National Emergency Services", Colonel Francis Lorenzo.

Thursday, May 8.—"Lung Blast", Dr. T. F. Rose.

The lectures will take place at 5 o'clock p.m. A cordial invitation to be present is extended to all medical practitioners.

## Obituary.

### ARCHIBALD JAMES CUNNINGHAM.

THE news that Lieutenant-Colonel Archibald James Cunningham had been killed on active service came as a shock to his many friends in Australia and in the Australian forces overseas. He was one of the junior gynaecologists of Sydney who had already gained a reputation for skill and sound judgement; he had also spent many years in making himself an efficient officer of the Australian Army Medical Corps. It was therefore natural that on the outbreak of war he should offer his services to the army. Naturally also his offer of service was accepted.

Cunningham studied medicine at the University of Sydney, graduating in 1921. He served as junior and as senior resident medical officer at Sydney Hospital and then at the Royal Hospital for Women, where he became medical superintendent. Here he devoted some time to the study of albuminuria of pregnancy and wrote a thesis on the subject which was accepted for the degree of Doctor of Medicine; the thesis was published in this journal in September, 1926. After spending some time in general practice in a Sydney suburb Cunningham was appointed assistant gynaecological surgeon at Sydney Hospital. He studied abroad in 1937 and devoted attention to both gynaecology and army medical work. He had interesting stories to tell of his interviews with army medical authorities in Germany. He was a tireless, energetic person and the type of man who would make a successful officer commanding an army medical unit. He leaves behind him an example of keenness, courage and devotion to duty.

Dr. A. W. D'Ombrian writes:

For many years our paths in life have diverged, but I cannot let pass the death of Archie Cunningham without paying my small tribute to his memory. For we grew up together, played our boyhood games and talked our boyish dreams in each other's company. And in the last war we enlisted as infantry privates on the same day.

In every local group of boys and youths there are those whose qualities of initiative and vigour mark them out as leaders and as sources of inspirations to their fellows. Of such was Archie Cunningham; bright-eyed and debonaire, he possessed in full measure a *joie de vivre* having its source in an ever-springing interest in life in all its aspects: work and play, thought and action. To all activities he brought his especial contribution, the quality of enthusiasm.

To many of us boys, and certainly to me personally, he personified the old saw: "If a thing's worth doing, it's worth doing well." Moreover, Archie did it gracefully and graciously. I feel sure he died with a smile on his unafraid face.

Major R. H. Russell, serving with the Australian Army Medical Corps abroad, in the course of a letter to Major-General Maguire, writes as follows:

You will have heard the sad news of Archie Cunningham's death, caused by a German dive bomber. A bomb struck the building in which he was, and burst in the room, killing him instantly. I did not see the place—was some miles away at the time and only managed to arrive in time for the funeral next day. He was of course buried with full military honours and in the most lovely part of this country which I have yet seen. We are of course all very sad—Archie by his hard work and splendid vision had built up and trained the field ambulance so that it has been able to give a good account of itself in this campaign. Anything which you will have heard to our credit is due, I can assure you, to his hard work and keen perception.

### CLIVE WENTWORTH THOMPSON.

We are indebted to Dr. A. H. Tebbutt for the following account of the career of the late Dr. Clive Wentworth Thompson.

A wide circle of friends in Australia will be grieved to hear of the death of Clive Thompson at Sydney on March 26. He came down to Sydney University from a well-known family in the Bathurst district. He was an energetic personality in his undergraduate days, and figured prominently in some of the humorous escapades of his time. No one enjoyed the retelling more than Clive. Yet when he settled down to the study of medicine he tackled it seriously and with understanding, and took his B.Sc. and M.B. with ease and credit. As a house surgeon at the Royal Prince Alfred Hospital he was most thorough and competent. One of his patients chanced to die before he was satisfied with the diagnosis, and an autopsy seemed withheld. Clive got leave for an hour or two, and returned to the hospital in a hansom cab with the nearest relative and obtained permission, and we spent Saturday afternoon doing a very full autopsy.

On the outbreak of war in 1914 he resigned from hospital and obtained the post of regimental medical officer to the First Battalion, Australian Imperial Force. He was particularly suited to regimental life and made many lifelong friends in Egypt and Gallipoli. He had a very hazardous and exhausting job at the Gallipoli landing and on the slopes around Monash and Shrapnel Gully, and worked like the Trojan he was. He was the medical officer who ran to General Bridges when he received his mortal wound. One



of the first, if not the first, Military Cross decorations awarded to medical officers went to him. Later he became a divisional sanitary officer, then D.A.D.M.S. to the First Division and later to the Second Corps on the Suez Canal and in France. In 1917 he took command of the Fourteenth Field Ambulance, was wounded once or twice and was later awarded the D.S.O. His war service in the Australian Army Medical Corps was long and distinguished, and second to none.

On his return to Australia he practised for a short time at Bathurst and then moved to Hamilton, Newcastle, where he was widely respected by his colleagues. He continued military service in the Militia, and commanded the First Field Ambulance. During the year he had not been able to practise, following a serious illness, and though he made some recovery and was hoping to do some useful service in war-time, he suffered a relapse which proved fatal.

His funeral was a private one, but several of his old army friends turned up to say farewell. Many more will keep his memory green. We extend our sincerest sympathy to his widow and children.

#### CHARLES FERDINAND MARKS.

We regret to announce the death of the Honourable Dr. Charles Ferdinand Marks, which occurred on March 28, 1941, at Camp Mountain, Queensland.

### Hospitals.

#### APPEAL FOR CLINICAL ASSISTANTS.

CLINICAL ASSISTANTS are urgently required by the public hospitals of Melbourne. Any practitioner who is prepared to offer his or her services is asked to communicate with the medical superintendent of the hospital in which he or she is prepared to serve.

Offers of help for even one out-patient session per week will be gratefully accepted.

### Australian Medical Board Proceedings.

#### SOUTH AUSTRALIA.

THE undermentioned have been registered, pursuant to the provisions of the *Medical Practitioners Act, 1919 to 1935*, as duly qualified medical practitioners:

- Dornan, John Ernest, M.B., B.S., 1940 (Univ. Adelaide), Royal Adelaide Hospital, Adelaide.  
 Swan, Edward Coles, M.B., B.S., 1940 (Univ. Adelaide), Royal Adelaide Hospital, Adelaide.  
 England, John Richard Fountayne, M.B., B.S., 1940 (Univ. Adelaide), Royal Adelaide Hospital, Adelaide.  
 Vellk, Mayer Morris, M.B., B.S., 1940 (Univ. Adelaide), Royal Adelaide Hospital, Adelaide.  
 Lee Tet, Norman Cornelius, M.B., B.S., 1940 (Univ. Adelaide), Royal Adelaide Hospital, Adelaide.  
 Rice, James Joseph, M.B., B.S., 1940 (Univ. Adelaide), Royal Adelaide Hospital, Adelaide.  
 Meredith, Mary Eva, M.B., B.S., 1939 (Univ. Melbourne), Northfield Infectious Diseases Hospital, Northfield.  
 Baldwin, Godfrey Joseph Burke, M.B., B.S., 1932 (Univ. Melbourne), Mount Gambier (serving with the Royal Australian Air Force).  
 Kinsbrunner, Sansome Siegfried, M.D., 1932 (Univ. Florence), Brisbane.  
 Kinsbrunner, Paul, M.D., 1935 (Univ. Bologna), Brisbane.

The following additional qualifications have been registered:

- Rees, Harold Mitchell, Woodville (M.B., B.S., 1924, Univ. Adelaide), M.R.C.O.G. (England), 1940, M.M.S.A. (London), 1939.

### Books Received.

"A Short Practice of Surgery," by H. Bailey, F.R.C.S., and R. J. M. Love, M.S., F.R.C.S.; Fifth Edition; 1941. London: H. K. Lewis and Company Limited. Demy 8vo, pp. 1,023, with 880 illustrations. Price: 30s. net.

### Diary for the Month.

- APR. 15.—New South Wales Branch, B.M.A.: Executive and Finance Committee.  
 APR. 15.—New South Wales Branch, B.M.A.: Ethics Committee.  
 APR. 16.—Western Australian Branch, B.M.A.: Branch.  
 APR. 17.—Queensland Branch, B.M.A.: Ipswich Hospital Clinical Society.  
 APR. 17.—New South Wales Branch, B.M.A.: Clinical.  
 APR. 17.—Victorian Branch, B.M.A.: Executive.  
 APR. 18.—Queensland Branch, B.M.A.: Council.  
 APR. 22.—New South Wales Branch, B.M.A.: Medical Politics Committee.  
 APR. 23.—Victorian Branch, B.M.A.: Council.  
 APR. 24.—Queensland Branch, B.M.A.: Brisbane Hospital Clinical Society.  
 APR. 24.—New South Wales Branch, B.M.A.: Branch.  
 APR. 24.—South Australian Branch, B.M.A.: Branch.  
 APR. 25.—Tasmanian Branch, B.M.A.: Council.  
 MAY 1.—South Australian Branch, B.M.A.: Council.  
 MAY 2.—Queensland Branch, B.M.A.: Branch.  
 MAY 6.—Queensland Branch, B.M.A.: Post-Graduate Committee.  
 MAY 6.—New South Wales Branch, B.M.A.: Organization and Science Committee.  
 MAY 7.—Western Australian Branch, B.M.A.: Council.  
 MAY 7.—Victorian Branch, B.M.A.: Branch.  
 MAY 9.—Queensland Branch, B.M.A.: Council.  
 MAY 9.—Victorian Branch, B.M.A.: Legislation Subcommittee.

### Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

**New South Wales Branch** (Honorary Secretary, 135, Macquarie Street, Sydney): Australian Natives' Association; Ashfield and District United Friendly Societies' Dispensary; Balmmain United Friendly Societies' Dispensary; Leichhardt and Petersham United Friendly Societies' Dispensary; Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney; North Sydney Friendly Societies' Dispensary Limited; People's Prudential Assurance Company Limited; Phoenix Mutual Provident Society.

**Victorian Branch** (Honorary Secretary, Medical Society Hall, East Melbourne): Associated Medical Services Limited; all Institutes or Medical Dispensaries; Australian Prudential Association, Proprietary, Limited; Federated Mutual Medical Benefit Society; Mutual National Provident Club; National Provident Association; Hospital or other appointments outside Victoria.

**Queensland Branch** (Honorary Secretary, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17): Brisbane Associated Friendly Societies' Medical Institute; Proserpine District Hospital. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

**South Australian Branch** (Honorary Secretary, 178, North Terrace, Adelaide): All Lodge appointments in South Australia; all Contract Practice appointments in South Australia.

**Western Australian Branch** (Honorary Secretary, 205, Saint George's Terrace, Perth): Wiluna Hospital; all Contract Practice appointments in Western Australia.

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